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Mr. A.S. Negi

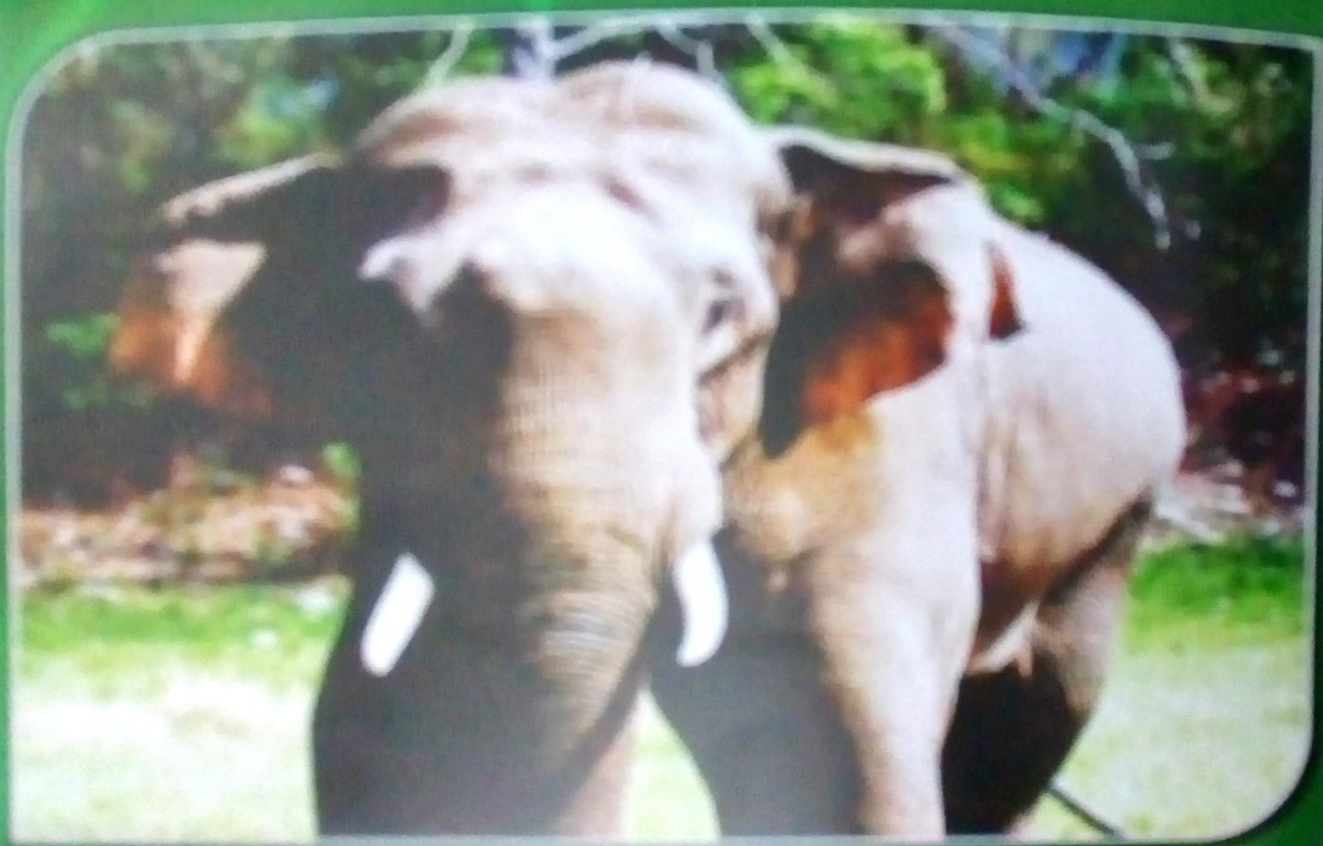
26.06.1943 - 18.10.2014

Delivering A Lecture at Wildlife Institute of India, Dehradun

Photo by [illegible]



Wild Ass



Indian Elephant

EDITORIAL :

Mr. A.S. Negi, IFS, the legendary wildlifer is no more. After leading a successful life, he passed away on 18.10.2014. ***The present Volume 52, No.3&4, 2015 is dedicated to his memory.*** It is a justified tribute to his long association of about twenty years with the society on various capacities. He became President of W.P.S.I. on 14.03.2010 and continued till death on 18.10.2014. His 'Simple living & high thinking' motto, deep knowledge of wildlife and forceful advocacy for the cause of wildlife had won the hearts of many people. His contribution in bringing up the Corbett and Rajaji National Parks will be remembered by all. He was a giant amongst wildlife experts. He inspired many to join the world of wildlife. He was always ready to advise and counsel. The society has lost a real tiger friend.

Researchers on wildlife biology are specially invited to publish their work in the Journal of Wildlife Preservation Society of India - "Cheetal", free of charge. Wildlifers, in general, are requested to send their observational articles for publication in the "Cheetal". We would like to give top priority to wild life photographers. Please send photographs (preferably post card size) of wildlife (Animals/Plants). Cartoonists on wildlife are most welcome to send their work for publication in "Cheetal". Puzzles, Quiz, Objective type Questions-Answers and Poems on wildlife are also welcome. We invite your attention to ignite the younger generation to become member of W.P.S.I and write about wildlife animals & Plants. Student members will be benefitted by reading the articles in "Cheetal", on wildlife biology and conservation which is now in their curriculum for study. Lastly, it is requested to our bonafide members to popularise the Wildlife Preservation Society of India in your neighborhood to become the member and participate in its activities. We also request to our members to give your comments/suggestions for the improvement of the "Cheetal" in future.

DISCLAIMER

'Cheetal' - Quarterly Journal founded in 1959, is published by Wildlife Preservation Society, India. The Journal is intended as a medium for communication and discussion of important issues that concern wildlife activity. All articles published in 'Cheetal' including editorials, research papers, observations and commentaries, letters and book reviews are deemed to reflect the individual views of authors and not the official points of view of editors and executive members of society.

DR. S. FAROOQ

M.Sc., Ph. D. (Gold Medalist)
D.Sc., R.G.D.B.M., F.R.S.H. (London)

Dr. R.P. Kala,
Hony. Secretary,
The Wild Life Preservation Society of India
Santaur Bhawan, 120 Pockets 3, Indita Enclave,
Harbanswala
PO- Mehuwala, Via- Majra
Dehradun

Dear Mr. Kala,

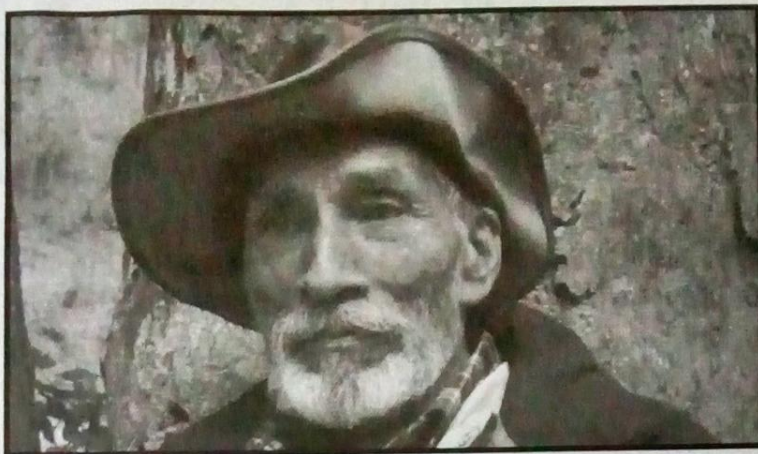
Thanks for sending me half yearly issue January-15 to June-15 of CHEETAL the official Journal of the Wild Life Preservation Society of India. I have gone through the contents and found them very informative. In my opinion the Wild Life Preservation Society of India is doing its patriotic duty in the field of preservation and conservation of wild life. My congratulations to the team for doing exvellent job.

It was sad to note that Mr. A.S. Negi Editorial President of the Society who was great wild life fan is no more with us and the Society has decided to dedicate next issue to his memory.

With best wishes,



(Dr.S.Farooq)



Shri A.S. Negi, President Wildlife Preservation Society of India (2010-2014) passed away.

OBITUARY :

We regret to inform our members that Shri Anand Singh Negi, President of W.P.S.I passed away on 18.10.2014 after a brief illness. Late Mr. A.S. Negi was the president of our society since March-2010. He was born on 26.06.1943 in Barab Village in Chamoli District (now Rudraprayag). He passed High School from Gandhinagar, Augustmuni and Intermediate from D.A.V. Inter College, Dehradun. Then he graduated from D.B.S. P.G. College, Dehradun, (The Then, Agra University) in physics, chemistry, mathematics group. He was selected for Superior Forset Services in 1965. He recieved his A.I.F.C. degree from Indian Forest College in the year 1965-67 (Batch). He was a member of the Indian Forest Service from April 1969 to June 2003 and of State Forest Services from 1967 to 1969. He served the U.P. Forest Department as A.C.F. Gonda-1967-1969, Area organiser of Pauri and Chamoli Districts, in S.S.B., organisation of Govt. of India from 1969-1978, D.F.O. of Banda, Baharaich District and Divisional Director of Social Forestry, Lucknow and Barabanki Districts from 1978-1984, Regional Director Social Forestry, Meerut Region 1984-1989, Field Director of Corbett Tiger Reserve 1989-1994, Director of Land survey Directorate 1994-1996, Conservator of Forest-Bhagirathi circle - 1996-1999, Regional and General Manager in U.P. Forest Corporation in 199-2000, Chief Wildlife Warden of Uttarakhand 2001-2002, and lastly, the Managing Director of Uttarakhand Forest Development Corporation from August 2002 to June - 2003, till his retirement. He was appointed by the Uttarakhand Government as Wildlife Advisor from 2004 - 2007. He served W.P.S.I. for many Years with distinction.

May his soul rest in eternal peace forever.

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A TRIBUTE: Anand Singh Negi, IFS (Retd)

Vinod Rishi, IFS (Retd)
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On 18 October 2014, Mr. Anand Singh Negi, the former and first Chief Wildlife Warden of the state of Uttarakhand, lost his struggle for life against cancer in a hospital at Chandigarh. He was 71 year old. The news stunned everyone who knew him. It took some time for the news to sink into mind, for in him I lost a close friend and a fellow professional.

Mr. A.S.Negi, as he was known to most of his colleagues, had undergone his 2 years Forestry Training Course during 1965-67 at the Indian Forest College and started his career as a Senior Forest Service Officer in the state of Uttar Pradesh. His was a large batch of 106 officers trainees of the Superior Forest Service. Some of his contemporaries known to have had made a mark in the field of forestry and wildlife conservation include field Mr. S K Mukherjee, former Director of the wildlife Institute of India, Mr. P.K. Sen, former Director of Project Tiger, Govt. of India, Mr. Kalyan Chakrabarti and Mr. P. Sanyal, former field directors of Sunderban Tiger Reserve, Mr. S. Naqushbandi, former Chief Wildlife Warden of J&K state, to name a few.

After the creation of the Indian Forest Service in 1966 he was inducted into the new All India Service and awarded 1969 as the years of his seniority at the all India level. He served the state of Uttar Pradesh till the creation of the state of Uttaranchal in 2000 A.D., after which he served the newly created State. He retired from the post of the Additional PCCF and M.D. Uttarakhand Forest Development Corporation (now renamed as Uttarakhand) State in June 2003.

Both Mr. Negi and I belong to 1969 batch of the Indian Forest Service, but because my service cadre was the state cadre of West Bangal, we first came together in early 1990s, when he was the field Director of Corbett Tiger Reserve and I was working in the Wildlife Wing at the Government of India, looking after Project Elephant, Project Tiger, National Parks and Wildlife Sanctuaries etc. Since 2001 we have been often walked together in the forests of Uttarakhand till fate took him away from us.

Many unforgettable incidents we shared took place when walking or driving through the Shiwalik Tigerland linger in my mind. He followed the age old Foresters' saying "The best fertilizer for a healthy forest is the Forester's Foot". Common interest and Professional background kept us discussing and debating the best ways of protecting and conserving our forests. He could walk tirelessly for hours, drive tirelessly over toughest of the forest roads, pointing at and discussing the structure of the forest and wildlife habitat, discussing concepts, theory and pragmatism required in the practice of conservation, and narrating the cases and examples for illustrating the points on protection and enforcement of law in field conditions.

His field craft was of superlative level. He could read jungle signs very well. Rajeev Mehta, one of his close friends in the Operation Eye of the Tiger- India organization, narrated an incident which took place in January 2014 when Mr. Negi

suddenly alerted everyone following him on foot through Dholkhand forest by telling them of the proximity of a bull elephant in Musth, because he could smell it. The group waited in silence, and a few moments later a tuskless "Makhna" bull broke cover some distance away.

As a dedicated field manager he was the man behind the landmark changes he brought up in the conservation of tigers in the Corbett Tiger Reserve. During his tenure there as a Field Director, Corbett Tiger Reserve, where he worked for 4-5 years during the first half of the 1990s, he spent most of his time inside the tiger reserve. It was his first Wildlife posting. Before he had taken charge, the CTR was in quite a bad shape. Terrorists, trespassers, dacoits, poachers were unstoppable. The time was not favourable for him: he had lost his son in an accident, and his son-in-law was abducted and remains missing till today. Yet, he did not falter and stood up to the test of time, refusing to surrender to the heart-breaking calamities, and spent his time in the protection and strengthening of the tiger reserve. A helicopter with armed hunters had landed on an island in Ramganga, and A.S. Negi made it an example for the world to notice that C.T.R. had to be treated with respect. It was also during this time he worked on approach and means for de-stressing the wildlife habitat suffering from heavy human incursions from three enclaves inside the forest, strung out along the southern boundary of the tiger reserve. It had become a highly vulnerable part of the tiger habitat. He approached people on personal level-- he had an uncanny ability of putting people at ease - and taking them along with him he amicably resettle them, without coercion, outside the tiger reserve. Today, this area is a part of the prime tiger habitat holding the highest density of tigers in the country.

During his tenure as the Chief Wildlife Warden of Uttarakhand State, he concentrated on the project on rehabilitation of forest dwelling Gujjar livestock herders. The project that had been losing steam over the years was given a direction a mighty boost by his pragmatic approach. He decided that Gujjars should be rehabilitated by concentrating on the programme by treating a Forest Range as a project unit. The results are visible on the ground with parts of Rajaji National Park bouncing back with their healthy wildlife populations.

Mr. A.S.Negi was a visionary. He created and utilized opportunities where he could help people living in the villages at the fringes of the forest and strengthen protection of wildlife with their cooperation. After his superannuation from the service he was more free to pursue his philosophy for people-aided wildlife conservation. Mr. Rajeev Mehta, Vice President of W.P.S.I. and also one of the Trustees of the organization "Operation Eye of the Tiger --India" expressed his contribution to the cause of wildlife conservation by narrating how Mr. Negi went back to Corbett Tiger Reserve and its surrounding buffer area after his retirement and brought a few schemes to help people living on the northern fringe of the tiger reserve. From his organization he distributed books, free of cost, to the children of Forest Guards, LPG connections to the families of people living at the fringe of the tiger reserve, introduced trails to encourage keeping good local breeds of cows by the livestock keepers, training of local people as guides for eco-tourism, and supporting local forest officers at Lansdowne and Ramnagar Divisions by placing at their disposal two special operations Group for anti-poaching work. Each Group consisted of 6 workers with a vehicle and was placed under the charge of a Range

Officer. The workers were trained by him at Kalagarh, along with forest guards, in the techniques for anti-poaching operations.

Mr. A.S.Negi was recognized for his dedication and zeal, and he had worked for two years as an Advisor on Wildlife matters to the government of Uttarakhand.

He was also on the State Wildlife Advisory Board for years after his superannuation from the government service. He was also the President of The **"Wildlife Preservation Society of India"**, based at Dehradun, till his last day.

Tall, gaunt, fair complexioned and piercing grey-green eyes concealed in Mr. A.S. Negi, a man who was always working for protecting nature, helping people and conserving wildlife since his early childhood. AS Negi belonged to a family that was closely associated with nature and forest. His elder brother Mr. N.S. Negi was the Principal Chief Conservator of Forests, Uttar Pradesh, and the eldest one was a Range Officer in Uttar Pradesh, who had spent many years at Dhikala in Corbett Tiger Reserve, and Anand could not have been left un-influenced with such an unique background.

MAY HIS SOUL REST IN PEACE !

MR. A.S. NEGI, IFS, PIONEER OF ECO-TOURISM PROGRAMME IN UTTARAKHAND

Naresh C. Madhwal

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I had several opportunities of learning many interesting and inspiring lessons about Eco-Tourism from late Mr.A.S. Negiji, while he was serving as the Managing Director(M.D.) of Uttarakhand Forest Development Corporation from August 2002 to June 2003. During his tenure, as M.D., the Eco-Tourism activities in the department reached at their zenith. By nature, he was very fond of generating new ideas about Eco-Tourism activities to be launched and conducted by the Uttarakhand Forest Development Corporation. He was a keen photographer, dedicated forest officer and a great writer too. Mr.A.S. Negi was a pioneer person in establishing many Eco-Tourism activities in forest department and Uttarakhand Forest Development Corporation between the years 2000-2003. During his tenure as the Chief Wildlife Warden of the state, it was he, who allotted on lease to Uttarakhand Forest Development Corporation three Forest Rest Houses of Sindhikhal (Kalagarh Tiger Reserve Division), Satyanarain and Phandowala. Later two are situated in the territory of Rajaji National Park (Now Tiger Reserve).

He very firmly insisted upon developing above mentioned F.R.H's into Eco-Tourism centres in the state. As M.D, he used to tell me about the immense importance of teaching and guiding the younger generation of our era, especially the students of various schools and colleges about problems of environmental deterioration and depleting wildlife of India. He was an expert in wildlife conservation and a gifted narrator of jungle stories. His Power of interpretation of jungle signs was quite extraordinary. I can recall one such incident related with him, which happened in the month of December 2002. According to his orders the old Forest Rest House of Phandowala was being renovated by the Uttarakhand Forest Development Corporation. One day I was inspecting the same rest house when suddenly at around 11A.M. Mr. A.S. Negi arrived there all alone by himself driving a departmental Qualis. It was his usual habit of inspecting field works before the forenoon session of his daily office hours. There, he instructed me to develop a nature trail for Eco-Tourists. After taking a cup of coffee, he rose up from the chair and asked me to accompany him in his official vehicle. He then drove the Qualis for about three kilometres towards the Ramgarh- Kansro fair weather road. He stopped the vehicle near an old culvert and we both got down. Then he pointed his index finger towards a spot just beside the forest road. There on a small patch of sand I clearly saw the pugmarks of a big male leopard. He bent down and told me how to determine the sex of a feline. After 15 minutes we heard the alarm call of a barking deer coming from a dense Lantana thicket distant about 300 yards away.

He was the Field Director of the world famous Corbett Tiger Reserve in early nineties of the last century. Once, I asked him Sir, 'How many times have you seen Tigers in the Corbett Tiger Reserve?' His short reply was, only 250, Mr.Madhwal. Mr. A.S. Negi

launched a unique programme of Natural Heritage and students in November 2002 to promote Eco-Tourism in schools and colleges. In brief the main objectives of that programme were as follows:

1. To inculcate a sense of appreciation for nature, forest and wildlife amongst the students.
2. To create opportunities to explore and get a hands on experience with nature.
3. To inculcate a sense of ownership and responsibility for natural heritage amongst children.
4. Capacity building through interaction with experts.

The student's age participating in the aforesaid programme must be between 12-16 years group. Many prestigious and famous schools and colleges of Mussoorie and Dehradun took part in that programme. Eco-tours were taken to many beautiful and natural destinations of Uttarakhand like Lansdowne, Chakrata, Kilbury, Khirshu, Chopta, Ranikhet, Bhimtal, Nainital, Harki Doon, Pindari glacier, Corbett National Park, Asan Barrage, Uttarkashi and Rajaji National Park etc. The schools affiliated with Natural Heritage and students programme were; Woodstock, Wynberg-Allen of Mussoorie, and many institution of Dehradun like Riverdale High school, Welham boys, Welham girls, Asian school, Hopetown girl's school and different central schools of U.P and New Delhi. During the field visits students were taught by various experts about Nature trails, pugmark identification, plants identification, bird watching, map reading, star gazing and later quizzes were held and prizes distributed. After the completion of tours some of the students and teachers were called to attend a symposium in the conference hall of the Aranya Vikas Bhawan of Uttarakhand Forest Development Corporation. There, Mr. A.S. Negi very gladly used to talk to the students. He took his time teaching them about the importance of our environment, ecology and flora and fauna conservation. To talk about the behaviour of Tigers was his favourite pastime. I had visited with him many famous old institutions of Dehradun like Asian school, Marshall School, Saint Jude and Hopetown girl's schools where Mr. A.S. Negi always had a lengthy and fruitful conversation with the students. He had a great collection of slides on Nature and wildlife. He was indeed a true Champion of flora and fauna conservation, and an expert in animal behaviour, a pioneer in the field of Eco-Tourism in Uttarakhand State.

May his soul rest in eternal peace forever.

SHRI A.S NEGI-THE GREAT WILDLIFER

Rajeev Mehta

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Gentleman, workoholic, honest, strong-energetic, humble, fighter, fair, sharp, commanding, decisive are just a few words, that I saw in Shri. Anand Singh Negi, IFS, my Guru in Wildlife. I met him immediately after his retirement in the year during operation Brahmachari in Hardwar where he was leading a rescue operation of a Tusker that had entered the city in Hardwar near Bhimgoda barrage.

His involvement in the operation gave me a surprise. He was quick, decisive, prompt, firm and polite in his command. He worked tirelessly all day and night in implementing the operation successfully. The tusker was relocated after being tranquilized on a truck into the Chilla range of Rajaji Tiger Reserve, (The Rajaji National Park).

Two days later I was at his house to give him photographs of the rescue operation that lasted 3 days. He was surprised by my involvement in the operation and said, it's the commonman like you and many more that need to work on wildlife conservation. I requested him to show me the way, he inducted me into his Trust - Operation Eye of The Tiger- India and the Wildlife Preservation Society of India within a week. My journey into wildlife conservation began under a person, whom I got to know as amongst the best human beings, and Wildlifers, I have ever met. Alongwith my Father, he was also instrumental in showing me the way to be a better human being. I feel immensely lucky to have travelled into the forest alongwith my father and Shri. A.S Negi together.

Having spent almost a decade and half in his company, what I noticed was, that he mostly spoke of wildlife and the people of Uttarakhand, especially the families and their children. Mr. Negi always dreamt of saving nature, forest, wildlife ensuring the active involvement of villagers and felt that unless the politicians and forest department do not involve them in wildlife conservation, man-animal conflict will only rise further in the state.

He loved people, children, adults, elderly, all of them and loved to interact with all. I had the pleasure of traveling with him to almost all protected areas (P.A.'s) in Uttarakhand. In 2008, we travelled together to Hemis, Chanthangthang in Ladakh and the Great Himalayan National Park (G.H.N.P) in Kullu, Himanchal Pradesh. In spite of being a little unwell he travelled to Chanthangthang not only for Wildlife but also to meet the people of his region at Garhwal Rifles. At all the various places we travelled, he made it a point to halt at most army regiments, just to meet the Jawans and shake hands with them. I learnt that he was an emotional man too. He faced many extreme situations in life, all tougher than the other may it be living on liquids for 2 years to fight acute asthma, or his son's demise in a MIG-21, air crash, the Elephant massacre at Corbett Tiger Reserve in 2001, and lastly fighting with cancer twice in 6 years. He never gave up. Through all these major turmoil. He led from the front and took his family through rough waters in a manner only few can do.

His knowledge in wildlife was unmatched, and he told me several times that it came not as on I.F.S but from spending time with the frontline staff on foot in the field. His biggest achievement during service was the relocation of Jhirna, Dhara, and Kothirao villages inside C.T.R, where he worked tirelessly with locals, day and night consulting, explaining all the pros and cons to the people, why Should they be relocate. He managed to convince them, and the rest is history. Today, Tigers breed and roam in all those regions. He also evacuated parts of Kalagarh and Laldhang. The gujjars relocation programme at Chilla range in R.N.P. too was initiated by Mr. A.S Negi successfully.

He revived "The Wildlife Preservation Society of India" after his retirement and joined Operation Eye of The Tiger-India a trust that was founded by Dr. AJT John Singh and N.S Negi, his elder brother to work mostly in North Corbett in Kalagarh, forest division and played a significant role in urging each household not to collect wood and to use L.P.G. instead. The impact of which is such that more than 3 trucks of L.P.G. go to the area every month. Having spent so many memorable years with him, has been my luck, and in all these years the one thing I learned about him is the respect and love that he had earned from the frontline staff across the state in Uttarakhand especially in Protected Areas, Sanctuaries and National Parks. Almost all who knew him spoke of him very fondly. This I feel was his biggest achievement.

He may not be physically here, but each time I travel into the forest he is by my side. Mr. A.S Negi, stood tall among men in stature as well as figuratively. I feel humbled and honored to have known him. I knew him mostly as someone sharp, intelligent and very knowledgble, eminent in his field and an iconic wildlifer.

My fondest memories of him are of visiting our home with his easy manner (especially with kids), his ready smile and his signature hat. I remember him as someone extremely passionate about his craft. His eyes lit up each time he spoke about wildlife; more especially when children asked him questions. His charismatic presence, infinite knowledge and passionate dream of tiger and wildlife conservation are now in our hands to fulfill. And we must pledge to do all we can to keep his legend alive. May he live in peace.

Z.S.I. TO CLEAR CONFUSION OVER NUMBER OF INDIAN BUSTARD

Jaisalmer : To clear the confusion over the exact number of Great Indian Bustard (Godawan) in Thar desert, Zoological Survey of India (Z.S.I.) will conduct a new census, an official said.

Deputy Director of Desert National Park, Anup K.R., said that the Z.S.I. will take up the task under a programme in order to determine exact number of Great Indian Bustard, popularly known as 'Godawan'.

He said that Z.S.I. will take up the task after some time. He also said that the number of this bird was around 1500 in the year 1981 but it reduced to 40 in 2014.

According to the officer, the forest department spotted only 13 Godawan in June this year. The situation about the existence of the bird will be clear after the new census, he added.

The Hindu, October, 04, 2015 (Courtesy - Dr. S.P. Singh)

REMEMBERING, Mr. A.S.NEGI JI

Dr.R.P.Kala

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Remembering a smiling calm face through my memory lanes, I can, but say that he had always radiated the aura of *Anand* (pleasure), *Singh* (a brave heart) to meet and cherish, an affectionate person from my childhood to his last days.

There is a great difference between the acquaintance and knowing someone; my first interaction, with late Mr Anand Singh Negi, dates back to 1958 at Motichoor, where he lived and studied with his elder brother Late Mr. Narayan Singh Negi, who worked with my father(Range officer, Motichoor Range, the then Dehradun Forest Division) in the forest department. I was a child studying in class IV aged about 10(Ten) years. He and his elder brother Mr. Narendra Singh Negi, studied with my elder brothers. This acquaintance continued on over the rolling years, as I also graduated from the Northern Forest Rangers College as a sponsored candidate of M/ S Star Paper Mills limited, Saharanpur. Since my primary job was to harvest trees and dispatch them to the Mills, interaction with the forest department and the Forest Officers was inevitable. As the fate would have its script, I joined U.P. Forest Corporation and had an opportunity to serve under his elder brother Mr. Narendra Singh Negi {General Manager (Hills), Dehradun}; we often met at his brother's office cum residence, while he was D.F.O. Meerut. Fate brought us together in 1998-99, when he was on deputation to U.P. Forest Corporation as General Manager, at Lucknow and I was working in General Manager (Hills) U.P.F.C. office, at Dehradun. I had to visit the Head Office at Lucknow quite frequently even weekly, while drafting the U.P. Forest Corporation Manual and a project proposal of "VANASPATI VAN", which was approved by the Ministry of Health & Family Welfare, Government of India. This gave us ample of opportunities to understand each other. He, being the senior officer, with his special affection for me, guided me in my official endeavours as an elder brother, but maintained the semi-permeable membrane for maintaining the decorum of office & personal acquaintance. I acquired a temperament of coolness and patience from him, which I still cherish as a precious gift from him.

The destiny brought us together, again, when he joined Uttaranchal Forest Development Corporation (presently Uttarakhand Forest Development Corporation) as the Managing Director, where I was working as Planning & Evaluation Manager; this was an opportunity of working in tandem with him on almost daily basis. He steered the newly formed organization with a great zeal & enthusiasm bringing in many positive and progressive innovative methodologies to improve the working environment and systems in the Corporation; He was successful in taming the errant employee unions with his cool & sincere temperament. Any organization, which has industrial peace, is bound to progress and move forward towards attaining higher goals; this happened to the UAFDC, during his tenure as the Managing Director. His visionary moves laid the strong foundations for the strong and healthy working environment in the Corporation.

Our interest in Wildlife came to us from the Motichoor days; for him, it was a great opportunity to start admiring the animal Wildlife, when his older brother late Mr. Narayan Singh Negi worked as the Park Officer, Corbett National Park. I got many

opportunities to be amidst the shooters, who came for shooting animal wildlife in areas where my father was posted as the Range officer. Those all old shooting blocks have become the part and parcels of wildlife Sanctuaries or National Parks for the simple reason that these areas possessed the enviable habitat characteristics for the reproduction and growth of particular wildlife (animal & plant) species- along with the amicable environment for the prey predator relationship to prolong over their generations. Necessity is the mother of invention – it is true, I had to learn about the general habits and movements of many animals, while planning and executing the logging operations in the course of my duties. It was out of my interest that I became the principal investigator of the “ VANASPATI VAN ,UTTARANCHAL”, a project on medicinal and aromatic plants, which gave me an opportunity to earn my degree of Doctor of philosophy from FRI University after my retirement from the active services of the Forest Corporation.

I still remember Mr. Negi's interest in boosting my enthusiasm , when he visited Mundali (Chakrata Forest Division) to inspect the MPCA developed under my supervision ; as he took charge of the post of the Managing Director , UKFDC(tenure 10-08-2002 to 30-06-2003). I had the opportunity to serve under him there; he introduced the concept of Eco Tourism in the Forest Corporation and was instrumental in opening a valuable wing in the Corporation.

Mr. Negi , not only had great interest in the conservation of animal wildlife , at the same time he knew for sure their habits, moods, vis a vis seasons and topography . He made an elaborate study on the psychology & modus operandii of cattle lifting leopards, predictability of their movements and post kill activities, which he would often share with us.

Impeccable and first hand knowledge acquired by him about wild & Feral animals is rare to be seen amongst most of the animal wild life enthusiasts and forest officers heading wild life departments in state forest departments or elsewhere. He and I, both taught at the Forest Research Institute University , in the capacity of resource persons faculty; we often use to meet there during our teaching assignments. I learnt a lot from him about the wildlife conservation over informal talks.

As the Honourary Secretary, WPSI , I enjoyed my tenure with him , as we understood each other well and had a very good mutual understanding. We finalized the painting competition entries of the wildLife Week celebrations -2014, just 3-4 days before his sudden demise. What I feel that we have not only lost a legendary Wildlife repository of animal behavioural psychologies & wildlife conservation techniques ,humane ethics , tireless working attitudes, and noble thoughts.

I can not for sure say that I knew Mr. A.S.Negi but we were good acquaintances; the acquaintance that lasted over 56 years. I have lost in him, a friend, philosopher and guide, may the Almighty rest his soul in peace.

बहुमुखी प्रतिभा के धनी थे, नेगी जी

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श्री आनन्द सिंह नेगी जी की पैदाइश, बाल्यकाल, शिक्षा और वन तथा वन्यजीवन से सम्बंधित शिक्षा और कौन-कौन से पद पर रहे, यह जानकारी "चीतल" के इसी अंक में आप पढ़ेंगे।

मैं पिछले 10-12 वर्षों से उनकी मृत्यु तक उनके साथ रहा। भारतीय वन्यजीव संरक्षण परिषद के जब वे अध्यक्ष बने तब से मैं और वह वन्यजीव शिक्षण, प्रचार व प्रसार से जुड़े रहे। मैं उन्हें प्रतिवर्ष अपने कॉलेज (डी0 बी0 एस0, देहरादून) की "राष्ट्रीय सेवा योजना" के वार्षिक कार्यक्रम में ले जाता था और वे कभी भी मना नहीं करते थे। उनके साथ काम करके मैंने उन्हें एक बहुमुखी प्रतिभा से सम्पन्न व्यक्ति पाया।

वन्यजीवन के ज्ञाता

'भारतीय वन सेवा' की पढ़ाई के बाद किताबी ज्ञान से बाहर आकर उन्होंने प्रकृति के खुले आँगन में वन्यजीवन को गहराई से देखा-परखा। वे बड़े आकार के स्तनधारी, विशेषकर माँसाहारी और शाकाहारी अन्य भी जैसे बाघ, तेन्दुआ आदि के तो विशेषज्ञ थे ही, इसके अलावा वो सभी वन्य प्राणियों के बारे में जानकारी रखते थे। मैं जब उनसे वन्यप्राणियों के बारे में पूछता था तो एक शिक्षक की भाँति समझाते थे। वन्यप्राणियों के प्राकृतिक आवास, रहन-सहन, सामान्य आदतें, जन्म-मृत्यु, हानि-लाभ तथा मानव-प्राणी सम्बन्ध आदि के ज्ञाता थे।

कुशल वक्ता

"राष्ट्रीय सेवा योजना" के कार्यक्रमों के दौरान अपने प्रोजेक्टर और स्लाइड कि सहायता लेकर व्याख्यान देते थे। वन्यप्राणियों की पहचान, शारीरिक बनावट, और उनके अंग विशेष का वर्णन करते थे। इस तरह प्राणियों के चित्र देखकर छात्र-छात्राएँ बड़े खुश होते थे और जिज्ञासावश प्रश्न भी करते थे। जिनका उत्तर उनको मिलता था। उनके व्याख्यान जानकारी से परिपूर्ण होते थे।

वन्यप्राणी फोटोग्राफर

वन्यप्राणियों से सम्बन्धित फोटोग्राफी में उन्हें महारत हासिल थी। "चीतल" के इसी अंक में आप उनके द्वारा खीचे गये अनेक फोटोग्राफ देखेंगे। चित्राकन (फोटोग्राफी) की विधा कोई उनसे सीखे। उन्होंने खासतौर से बड़े आकार के स्तनधारियों जैसे टाइगर व लेपर्ड आदि के फोटो खींचे। ये फोटोग्राफ बड़े आकर्षक हैं। बुग्यालों के फोटो भी लाजवाब हैं। उन्होंने मुझे रूपकुण्ड के चारों तरफ बिखरे पड़े मानव-कंकालों के फोटोग्राफ भी दिखाए थे, जिन्हें उन्होंने खुद अपने कैमरे में कैद किया था। मुझे उनके द्वारा की गई फोटोग्राफी बहुत याद आती है।

पर्यावरण प्रहरी

वन, पर्यावरण और वन्यजीवन की गहरी समझ विरले लोगों को ही होती है। पर्यावरण व मानव सम्बन्ध, पर्यावरण और जीव सम्बन्ध, पर्यावरणीय-विकास आदि पर उन्होंने विशेष ध्यान दिया। वन्यजीवन "मैनेजमेंट" पर अपने विचार रखना, उन्हें कार्यरूप में समाहित करना उनके ही वश की बात थी। उत्तर भारत के कई अभ्यारण्य, वन्यजीव विहार और राष्ट्रीय जीव मण्डलों की परिकल्पना में उनका योगदान रहा। कार्बेट नेशनल पार्क के नवीनीकरण में उनका विशेष हाथ रहा। सोना नदी 'वाइल्ड लाइफ सेंचुरी' को स्थापित करने में सरकार को विशेष सहयोग व मार्गदर्शन उन्होंने ही किया था।

प्रख्यात वन्यजीव लेखक

"चीतल" के प्रस्तुत अंक में नेगी जी के ही लेख सम्मिलित किये गये हैं। "भारतीय वन्यजीव संरक्षण परिषद", उनके लिखे गये लेख इस अंक में संकलित कर उन्हें विनम्र श्रद्धांजलि दे रहा है। वन और वन्य जीवन का यथार्थ चित्रण उनके लेखों में भरा पड़ा है। उनके लेखों को पढ़कर निश्चित रूप से ज्ञान वर्धन होता है। लेखन कला में माहिर उन्होंने वन और वन्यजीवों के सम्बन्धों पर खूब प्रकाश डाला है। लेखों में विविधता है। खास तौरपर बाघ (Tiger) और गुलदार (leopard) से सम्बन्धित लेख लिखे। पर्यावरण और वन प्रबन्धन पर भी लेखनी चलाई। वन पंचायत, पारिस्थितिकीय-पर्यटन (Eco-Tourism) और मानव-वन्यजीव संघर्ष (Human Wildlife conflict) पर उनके लेख जानकारी व नवीन शोध और तथ्यों से परिपूर्ण व मार्गदर्शक हैं। वन्य जीवन पर उनके द्वारा लिखित एक पुस्तक प्रकाशनाधीन है जिसे वे मृत्यु पूर्व लिख कर सौंप गये हैं। उनका पुस्तकीय लेखन कार्य हमेशा याद किया जाएगा।

सामान्य नागरिक

उनका व्यवहार, बातचीत का ढंग ओर रहन-सहन सादगीपूर्ण था। हंसमुख चेहरा, नीली आँखें और लम्बा शरीर दुबला पतला ही सही, पर था बड़ा प्रभावशाली व मिलनसार। बहुमुखी प्रतिभा का धनी एक सामान्य नागरिक श्री० आनन्द सिंह नेगी हमें हमेशा याद आता रहेगा। उन्हें मेरी विनम्र श्रद्धांजलि।

BIOGRAPHY OF MR. A.S. NEGI

Mr. S.K. Banerjee

E-mail : enterbanerjee@yahoo.com

1. **Proposed Position** : Forestry and Environment Expert
 2. **Name of Firm** : The Energy and Resources Institute (TERI)
 3. **Name of Staff** : **Anand Singh Negi**
 4. **Date of Birth** : 26.06.1943 Nationality : Indian
 5. **Education** :

Institution	Degree	Year
Agra University	B.Sc. (Physics, Chemistry and Maths)	1964
Indian Forest College, Dehradun	AIFC (Associate of Indian Forest College)	1967

6. Membership of Professional Associations:

Member, Expert Committee for Management Effectiveness Evaluation of Protected Area Network of Northern India, Ministry of Environment and Forests, Government of India. (2008 to Present)

President, Wildlife Preservation Society of India, Dehradun, Uttarakhand. (2005 to 2014)

Member, Environment and Anglers Association, Dehradun, Uttarakhand. (2003 to 2014)

Cordinator, National Biodiversity Conservation Strategy and Action Plan, Government of India. (2001 to 2002)

Observer in the first ever scientific tiger Census conducted by Government of India with technical support of WII. (2005)

7. Employment Record :

From : June 2007 to Oct 2014

Employer : The Energy and Resources Institute (TERI)

Position held : Consultant

From : June 2004 to Feb. 2007

Employer: Government of Uttarakhand

Position held: Adviser (Wildlife)

From : July 2003 to June 2004

..... Wildlife Warden of Uttarakhand)

(2 Year & 4 Year Months)

From : Sep. 2002 to June 2003

Employer : Government of Uttarakhand

Position held : Managing Director, Uttarakhand Forest Development Corporation

From : Jan. 2001 to Aug. 2002

Employer : Government of Uttarakhand

Position held : Chief Wildlife Warden, Government of Uttarakhand

From : May. 1999 to Dec. 2000

Employee : Government of Uttar Pradesh

Position held : Regional Manager and General Manager, Uttar Pradesh Forest Corporation

From : July 1996 to April 1999

Employer : Government of Uttar Pradesh

Position held : Conservator of Forests, Bhagirathi Circle

From : July 1994 to June 1996

Employer : Government of Uttar Pradesh

Position held : Director Land survey Directorate, Dehradun

From : Nov. 1989 to June 1994

Employer : Government of Uttar Pradesh

Position held : Director Project Tiger, Corbett Tiger Reserve

From : Feb. 1987 to Dec. 1989

Employer: Government of Uttar Pradesh

Position held: Regional Director (Meerut region), Social Forestry Project

From : July 1978 to Feb. 1987

Employer : Government of Uttar Pradesh

Position held : Divisional Forest Officer (Baharaich and Banda Districts); and Divisional Director (Lucknow and Barabanki Districts), Social Forestry) Project (World Bank funded)

From : July 1969 to June 1978

Employer : Government of India

Position held : Area Organizer and Sub Area Organizer in SSB Organisation of Government of India, Corbinet Secretariat

From : April 1967 to June 1969

Employer : Government of Uttar Pradesh

Position held: Assistant Conservation of Forests

Mr. Anand Singh Negi was a member of the Indian Forest Service (IFS), Uttarakhand / U.P. Cadre, from April 1969 to June 2003 , and a member of the State Forest Service from April 1967 to March 1969.

SCOPE OF ECO-TOURISM IN UTTARAKHAND

A.S. Negi, IFS

Uttarakhand is the 27th State of Indian Union, born on 9th November 2000 after reorganization of the State of Uttar Pradesh. The State has unique geographical, climate and cultural diversity. It falls in the Western Himalayan region with altitudes above sea level varying from less than 300 meters to over 8500 meters. It may be the only State in the country in which subtropical, temperate, sub alpine, and trans-Himalayan climates could be found at such a short vertical distance. The State has wide range of snow peaks including Nanda devi, the second highest peak in India. The higher Himalayan regions of the State have large Glacial systems and Ganga, Yamuna, Ramganga and Kosi, the major river systems have their origin in the State. 65% of the geographical area of the State is under forests, out of which nearly 44% has good forest cover. The State has a good network of Protected Areas with six National Parks and six Wildlife Sanctuaries. The world famous Corbett National Park created in 1936 has the distinction of being the first National Park of Indian subcontinent. Nanda devi WLS notified in 1939 and was later elevated to the status of National Park in 1982. Rajaji WLS, which is now part of Rajaji National Park was established in 1948. Govind WLS came in existence in 1955. The State has 13.7% of its geographical area under Protected Area network as against a national average of 4.6%. It is thus clear that the conservation history of the country has its roots in this small Himalayan State.

Out of about 4000 tiger population in the country, Uttarakhand alone harbors nearly 250 tigers in its PAs and other Reserved Areas. The Asian Elephants also has significant presence in the State with over 1000 elephants being recorded in the latest census. Uttarakhand population of tigers and elephants is the Northwestern limit population in their range. Apart from these two mega mammals the State has large range of rare and endangered mammals, birds, reptiles, amphibians, fishes, medicinal plants and other species of flora and fauna. The high altitude meadows are repositories of large variety of important medicinal plants. Musk deer is the State animal, Monal pheasant is the State bird, Brahm Kamal is the State flower and the beautiful Rhododendron has been identified as the State tree of Uttarakhand.

Uttarakhand has been a tourist destination from 1883 when W.W. Graham attempted to enter the inner sanctuary basin of Nanda Devi. These unsuccessful attempts continued during 1926, 1927 and 1932 when Eric Simpton and H.W. Tilman finally succeeded in 1934. In 1936, first successful expedition on Nanda Devi peak was done. The exploration of Valley of Flowers was done by Frank Smyth in 1931 who wrote the beautiful account of wild flowers found here in his famous book, 'The Valley of Flowers'. The rafting of Deodar timber from the forests of Tehri Estate by Wilson through river Bhagirathi was done in early nineties when he also constructed a huge timber bungalow at Harsil. Corbett National Park has been a tourist destination for nature lovers since pre independence days. The Tarai-Bhabar forests of Kumaon including Corbett National Park and Kumaon hills and parts of Garhwal were made world famous by Jim Corbett in his popular writings. Skendhu wrote an interesting account of his Mahaseer angling in

his book. 'The Mighty Mahaseer'. There was a chain of hunting blocks all along the foothills for hunting by several VIPs including some English Viceroys and Governor Generals. Uttarakhand has been and shall always be a favourite destination for nature lovers, adventure seekers, writers, poets, peace lovers, wildlife enthusiasts and people of Hindu religion making pilgrimage to Chardham temples of Badrinath, Kedarnath, Gangotri and Yamotri. The Gurudwara of Hemkund Sahib is visited by over 0.3 million Shikh and other devotees. The folk songs, folk dance, local customs and costumes are typical in different parts of the State. Majority of the people are honest, simple, contented and peace loving.

Eco-tourism is a tourist activity done in an ecologically sustainable manner by an environmentally aware visitor. This activity can also be used to educate the less aware or unaware visitors specially the younger generation. Of late, there has been a general tendency to call every tourist activity as eco-tourism activity to attract clientage but little care is taken to make it environmental friendly and sustainable. A visit to Protected Areas of forest areas is also generally termed as eco-tourism. Uttarakhand State as a whole is ecologically sensitive because of recent geological formation of Himalaya its receding glaciers, which are the main source of our large river systems and the typical geographical features of the majority of the State. The forests and the Himalaya of the State moderate the national and global climate. Under such a situation every tourist activity in the state has to be environment friendly and ecologically sustainable. In order to keep our rivers clean, keep our forests intact, save our valuable flora and fauna, reduce the rate of siltation of rivers every tourism activity has to be carefully and meticulously executed. Seventy seven percent of the high altitude area where strict regulations are not possible due to their tough geographical situation. The mountaineering expeditions outside PAs need the same degree of regulations.

Government of Uttarakhand has formulated its eco-tourism policy and it will be the second Himalayan State in the country to have formulated its mountaineering policy. Eco-tourism is ultimately going to be the main stake of this State with multifarious activities, snow skiing, river rafting, trekking, outdoor/nature camping, angling by rod and line, rock climbing, botanical, zoological and geological study tours etc.

The promotion and regulation of eco-tourism in the State of Uttarakhand is not only in the overall interest of the country but also for the regulation of global climate. The existing infrastructure of this small state with limited financial resources needs to be reasonable expanded in order to promote and regulate the eco-tourism. It is earnestly hoped that the Government of India and private entrepreneurs will come forward and strengthen the hands of the willing State Government.

ECO-TOURISM – WITH SPECIAL REFERENCE TO CORBETT TIGER RESERVE

A.S. Negi, IFS

Eco-Tourism is different from other kind of tourism as it involves travel to Wilderness areas for enjoying and understanding the biodiversity and cultural heritage of the area. The term eco-tourism in the present day context is generally used for travel to Protected or wilderness areas. This involves travels to comparatively unknown areas. Each wilderness area offers new experiences to its visitors. Since time immemorial, tourism or travelling has been a joy seeking activity, where man wants to get away from his busy routine. Once and individual gets away from his day-to-day routine, he wants to be free and would not like to be bound by strict rules and regulations. When we talk of eco-tourism then the visitor in our mind is one who is willing to learn through enjoyment, who is aware of the social and environment impacts of his visit to the wildness or protected areas and who is daring and willing to undertake certain inconveniences during the course of his visit to such areas. He should also be willing to rough out in relatively simple and environment friendly facilities. To go one step further, eco-tourist is also expected to contribute to the conservation efforts and should be conservation oriented. When he goes back he should think of the linkages of his consumerism and luxury living with nature conservation and from a eco-tourist he should convert himself to all time eco-friendly man.

India is a country which offers great opportunities for eco-tourism and can be rated second only to African countries. It has vast potential of wilderness areas with great biodiversity. India is making great efforts to conserve this unique bio-diversity. It is to the credit of the Government that from 10 National Parks and 127 Sanctuaries occupying about 25000 sq. km in 1970 total protected area (PA) network in 1991 went upto 1,32,000 sq. km with 66 National Parks and 421 Sanctuaries. The Government has a much higher target to bring more areas in the protected area network and aims to increase the protected areas to 1,83,000 sq. km that is, around 5.6 percent of the country's land area comprising 147 National Parks and 633 Sanctuaries.

Despite its stunning array of natural, cultural and anthropological attractions, India's share in the world tourist is a dismal 0.31 percent. Wildlife of protected area attract only a fraction of the tourists coming to India. The reason may be poor marketing efforts, lack or proper facilities, riots of other disturbances and great deal of red tapism in dealing with tourists at various levels including certain unreasonable restriction in certain "Protected Areas".

Due to increasing pressure of human and cattle population most of our protected areas have become islands of vast resources surrounded by greedy population. Legal regulations deny access of local population to these areas who have been traditionally using these areas for various day-to-day needs. It is almost impossible to bring home the idea of bio-diversity conservation in the minds of people particularly when they find free access being allowed to outsiders. This causes conflict between managers of these areas and the local population. In order to protect these vast wilderness areas rich in their

biodiversity, it will be necessary to frame the tourism policy of the protected areas in such a way that the areas of conflicts are minimized and local people get their fair share out of the eco-tourism plan of the area. The hostility of the surrounding population may cause much more damage to these areas than an unregulated tourism policy. It is therefore, most important to harmonise the tourism plan of the area to accommodate the local needs in such a way that the conservation of the area gets top most priority. The objective has to be create public awareness for conservation in general and to build up a sizable public support for the protected area in particular. In order to achieve this the following efforts can be made :-

1. Forming co-operative of local people to organize catering and accommodation for lower and middle income group visitors.
2. To train local educated youths as nature guides and engage them for interpretation work with visitors.
3. To augment income of local people by sale of local artifacts and handicrafts through local co-operative to the visitors.
4. To encourage local people to perform traditional cultural programmes for visitors in order to get some additional income.
5. To involve local school/college students and members of NGOs for helping P.A. authorities in interpretive programmes and services.
6. Conduct eco-development works in the surrounding villages like soil conservation, solar energy, plantations on barren lands, development of pastures, horticulture, sericulture, bee-keeping, development of local handicrafts, fisheries, animal husbandry, minor irrigation, child and women health care etc. as per the needs of the local people. This need not to be the sole activity of Government and P.A. management but NGOs, tour agents and private tourist can also undertake these works. Conservation awareness programmes can also be taken up under this activity.
7. Money generated through eco-tourist should be recycled to carry out above eco-development works in and around protected areas. At present all the money generated by tourism in these areas goes to Government exchequer and annual budget allotment to PAs does not take into account this revenue. The idea of levying 5 to 10 percent tax on the total profit made by tour promoters annually and utilizing it in the development of surrounding villages is also a welcome proposition.

Coming back to eco-tourism, it is necessary to understand the basic difference in general type of tourism and eco-tourism. The areas visited by eco-tourists are delicate areas and the purpose of preserving these areas is to hold, for ever, the precious biodiversity which got evolved on earth over the eons. These areas not benefit the mega mammals like tiger, elephant, rhino, bison etc. but are also home for many smaller mammals, birds, insects and plant life. Moreover they supply humans, particularly India's 60 Million tribal population with uncounted goods and services such as water, fuel, fodder, fibre and food. The eco-tourists should therefore go back from these wildernesses with

deep appreciation of nature rooted within their consciousness.

The general, craze for sighting of mega-mammals such as tiger, elephants lion, bison, rhino etc. loses sight of other equally interesting and thrilling partners of nature such as variety of deers, antilopes, birds, insects and butterflies, reptiles, aquatic animals and variety of plants. Observing nature in its diverse forms is as interesting and thrilling as sighting 3 mega-mammal. Plant communities and successions, mighty trees, dense and dark forests, changing patterns of colours, clear night skies and great proximity of stars, night sounds in the forests, lovely river noises, dark silent nights with occasional alarm calls, bird sounds and beetle cries, termite activities, animal signs during forest drives, foot prints of mega-mammals, great variety of butterflies and insects and many other things are far more exciting and everlasting in your memory.

In order to experience the thrills and understand the delicate natural balance in the protected areas the visitor has to conduct himself in a disciplined way. No moment in these areas should be treated as picnic. A little non-seriousness and negligence on the part of the visitor may deny him an experience of his life time. Efforts of hundreds of disciplined tourists may be nullified by a single non-serious and negligent tourist. It is with these things in mind that certain rules and regulations are framed for protected areas and certain restrictions are imposed. The number of tourists is also regulated to keep the disturbance at the minimum. A true eco-tourist will honour these restrictions and regulations to further the cause of conservation.

Corbett Tiger Reserve is one of the country's foremost protected area where tourism has been going on since past almost fifty years. It is attracting more than 40,000 tourists annually about 20 to 25 percent of them being foreigners. Eco-tourism plan of the reserve is being framed and will form part of the management plan of the reserve which is under preparation for next 10 years. The reserve faces lots of difficulties due to day-visitors to Bijrani area most of whom are non-serious people from surrounding areas. With the introduction of trained guide service since 1993 and due to conducted visits by some of the private tourists accompanied by nature guides things have improved but there is still scope for further improvement. The greatest threat comes from VIP visits accompanied by large number of Govt. officials and convoys of vehicles. The security arrangement for VIPs throws all efforts of Park Managers to winds. A single VIP visit may nullify the efforts of the Park Managers of the whole year. The Park Managers are still awaiting the day when the eco-tourism concept will also be accepted by the VIP's. Opening of certain new areas for tourists and popularizing certain other potential areas such as Sona Nadi Sanctuary, Northern boundary of the Reserve and sites evacuated by certain villages in the south will decrease the pressure on core area. A new reception office has been opened at Kotdwara but lot of efforts need to be done to popularize entry from Kotdwara through route.

One significant event that has taken place in this direction recently is the setting up of Corbett Foundation, a private trust, which is engaged in eco-development works in the buffer area of the reserve with special emphasis on its awareness programme. It is earnestly hoped that the activities of the Trust will further the cause of eco-tourism and it will become a pioneer organization to further the conservation efforts in and around Corbett Tiger Reserve.

NATURAL WEALTH OF UTTARAKHAND FORESTS AND WILDLIFE

A.S. Negi, IFS

Uttarakhand came into existence as a State on 9th November, 2000 after reorganization of U.P.. The basis of creation of the new State was its geographical location in Himalayas. Its share of geographical area from the parent State is 18% inheriting only a little over 5% population. 67% of the total forest area of the undivided UP is now in Uttarakhand. Forest area in Uttarakhand constitutes 65% geographical area though the forest cover is only on about 44% of the total geographical area. This is next only to Sikkim in India. As far as the forest cover, this State is much above the world average of 32.8% and is next only to Indonesia, Brazil and Canada. India's per capital forest cover is 0.08 ha. (It was 0.20 hac. in 1951) which is much below the world's average of 0.89 hac. The per capita forest cover in Uttarakhand is 0.49 hac. which is next only to Himachal and Sikkim in India.

Uttarakhand may be the only State where within a short distance we find subtropical, temperate, alpine and arctic climates. The unique feature of forests of Uttarakhand is therefore its distribution from low lying Tarai areas to the tree line areas around 3000 m. above sea level. Beyond tree line, there are vast and rich altitude pastures. The extensive Sal forests in Tarai-Bhabhar extend little above the foothills, within the same area. There are miscellaneous forests with species richness and the riparian belts along wide stream beds interspersed with grasslands. After the transition zone of Sal and Chir, there are extensive forests of pure Chir-pine with Ban-oak. On higher elevation, Chir-pine is replaced by pure Oak forests. On higher altitudes, the forest types ranges from pure Deodar to mixed Kail and Deodar forests and pure kail patches. On this altitudinal range depending upon edaphic factors, there are Moru oak forests mixed with mapples, walnuts, horse chestnut etc. The forests on still higher altitude are those of fir and spruce mixed with Kharsu oak, *Taxus bacata*, *Alnus* and variety of other trees, shrubs and bushes. The tree line consists of *Rhododendrons*, *Cotoneasters*, *Viburnum* etc. which are mostly in the bushy form.

The alpine pastures are extremely rich in rare and valuable medicinal plants. Before the snow covered peaks and glaciers, there are moranes where some rare plants grow. The Brahm Kamal, Fen Kamal and Neel Kamal can be seen on difficult slopes and situated between 3600 m. to 4500 m.

The floral diversity is closely associated with the faunal richness of the State. Due to climatic, edaphic and floral diversity, the State is rich in various mammals, birds, reptiles, fishes, amphibians and insects. Approximately 14% of the State's geographical area is under Protected Area network. More than one fourth of the reserved forests comprise of the National Parks, Wildlife Sanctuaries and Conservation Reserves. Nanda Devi Biosphere Reserve, which is representative of Himalayan biogeographical zone with an area of 5800 km² is situated in the State. Corbett National Park situated in Tara Bhabhar region, is the first National Park of the Indian Sub-continent established in

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1936. Nanda Devi National Park situated on high altitude and encompassing the second highest peak of the world is another jewel in the crown of Uttarakhand. There are in all 6 National Parks and 6 Wildlife Sanctuaries and two Conservation Reserves in the State with a total area of 7370 Km².

Uttarakhand has an elephant population of 1000 to 1500 which is the North-Western limit population of Asian elephants. Similarly the Royal Bengal Tiger population of about 200-250 animals is the North-Western population of tigers in its existing range. Corbett - Rajaji Tiger Conservation Unit (T.C.U) has been recognized as one of the important T.C.U by tiger experts. Uttarakhand has the distinction of having some of the rare animals and birds. Apart from elephants and tigers, some of them are, Snow leopard, Musk deer, Himalayan Thar, Blue sheep, Red fox, large population of leopards, 3 species of Bears, Smooth Indian Otters, some smaller Cats, Civets, Martins, Magars, Gharials, Mahaseer fishes, two species of Tragopans, Monal pheasant, Chir pheasant, Chukor, Koklas, Black partridge, Kaleej pheasant, Peacocks, King Cobra, Python and variety of other mammals, birds, fishes, reptiles, amphibians and insects. The broad estimation of various species of flora and fauna in the State can be given from various studies done in Corbett National Park and Nanda Devi Biosphere Reserve from time to time. The two are the representative areas of the lower Tarai-Bhabar tract and high altitude areas respectively. The studies indicate the following numbers of species.

Corbett Tiger Reserve

Flora	No. of Species	Fauna	No. of Species
Higher Plants	266	Mammals	55
Lower Plants	222	Birds	526
Aquatic and Marsh herbs	25	Reptiles and Amphibians	33
Grassess	42	Fishes	29
Hedges	25		
Woody Climbers	22		
Herbaceous and sub wood climbers	25		
Eqiphytes	8		
Bryophytes	20		
Mosses	8		
Lichens	20		

Nanda Devi Biosphere Reserve

Fauna	No. of Species
Mammals	29
Birds	229
Reptiles, Amphibians and Fishes	12
Arthropods	230
Molluscs	23
Annelids	6

The forests of Uttarakhand are not only vital for the environment of the State but they play important role in regulating the climate of the country. Their contribution towards the economy of vast population of Indo-Gangetic plains can not be undermined. The Himalayas are store house of water as their snow covered peaks and extensive glaciers sustain a perennial river system that not only supports irrigation and power projects but also helps in recharging the groundwater of fertile plains down below. The oak forests are known to conserve water through their massive root system. They along with other forest systems also regulate the flow of water without disturbing the fragile ecosystem of the young Himalayas. Denudation of forests leads of extensive floods in the plains. The mythological belief of Hindus that Lord Shiva's long hairs contained the merging Ganga from Himalayas gained ground only due to these factors. In a forested area, only 38 kg. of soil erosion takes place annually whereas in a deforested area 138 tones of soil erosion has been estimated during one year.

With only 10% fresh water available out of the total available water on the earth, the contribution of Uttarakhand is substantial. It is said that the forests are the mother of rivers. It is most befitting for Uttarakhand. All the villages situated on hill slopes derive their water from the springs fed by the forests.

In terms of growing stock of important timber, pulpwood and other industrial wood the State has approximately over 19 crore cubic meters of growing stock in its forest mainly of Sal, Chir, Fir, Spruce, Kail, Deodar, Teak, Poplars, Sissoo, Khair and other miscellaneous species, This capital is worth 76000 crore in monetary terms. If we take increment on this capital as 1 percent per annum then these forests are capable of yielding wood worth 760 crore of rupees every year.

Apart from timber, the Chir forests are yielding over one lakh quintal of resin every year which is worth 30 crore of rupees. They also produce Bamboo, Ringal, Baib grass, Thatching grasses, Fodder grasses, Medicinal herbs, Fruits and flowers worth millions of rupees in value. The fuel wood and fodder needs of the villages and townships are also met solely from these forests. Even building material such as sand, boulders etc. are produced from the river beds in the forests.

Out of approximately 46 lakh cattle head in the State 75% depend for grazing on the forests. Taking Rs. 50/- per day per cattle as the contribution of the forests in their

fodder need, the forests provide fodder worth nearly Rs. 620 crores every for these cattle. The high altitude pastures are favourite grazing grounds of sheep, goats, buffalos, horses and mules. The nomadic graziers such as Gujars and sheep and goat graziers solely depend on these pastures for nearly 6 months during summer and rainy seasons. For the remaining period their dependence is on Tarai-Bhabar forests.

The eco-tourism and adventure tourism potential of the forests are unlimited. Corbett alone attracts over one lac tourists annually. Mountaineering, River rafting, Nature camping are other important activities which depend on forests, wildlife and natural surroundings of the State. The pilgrimage to important religious place situated in remote natural settings is also an important economic activity of the State.

It can safely be concluded that the main stake of this newly created State of Uttarakhand is going to be the forest, nature and water based activities. The natural resources of this small Himalayan State are vast and the future of this resource rich State will depend on how they are conserved for sustained utilization. A careful approach balancing the developmental needs and environmental considerations seems to be the answer.

Mid-Himalayan region wildlife census begins

Dehradun : A four-day census of wildlife population belonging to the Mid-Himalayan region began Thursday, sources in the forest department said. Leopard, black bear, wild boar, monkey and langur would be part of the survey, they said.

However, the inmates of the Gangotri National Park, belonging to the Trans-Himalayan region, were not included in the ongoing census, as a survey of wildlife population in that region was done in June this year, the officials added.

The aim of the survey is to provide a roadmap to the forest department in understanding the reasons for spread of the population of listed species and the causes for rising man-animal conflicts.

Mr. Dhananjai Mohan, Chief conservator of forest (CCF), wildlife and intelligence, told Hindustan Times, "The four-day census has begun today. Except for the Gangotri National Park, the census will cover all the forest areas and the human settlements from where the incidents of man-animal conflict have been reported".

While the census of leopard would be done on the basis of their sightings in forests and human settlements, only index and not the numbers would be included in the survey of wild boars, the officials said.

Monkey population, whose sterilisation has already begun at Hardwar, would be estimated on the basis of direct count.

The Hindustan Times, December, 11, 2015 (Courtesy - Dr. S.P. Singh)

VAN PANCHAYATS

A Community Level Conservation Initiative In Uttarakhand

A.S. Negi, I.F.S.

1. Brief Geographical Information about Uttarakhand :

Uttarakhand is a new State created from the State of Uttar Pradesh on 9th Nov. 2000. It is situated in mid Himalayas with rich forest cover. The source of Holi Ganga & Yamuna rivers is in Uttarakhand. The salient features of the State are as under:

Total area of State – 53485 Sq. km.

Forest Area – 34662 Sq. Km.

Forest cover – 44% (approx)

Medium to dense Forest cover – approx 29%

Civil Soyam Forests – 6355 Sq. Km.

Van Panchayats – 5450 sq. km. (Civil Soyam and Reserve Forests)

Agriculture – 14.6%

Irrigation-13%

Unirrigation-87%

Population – 8479562

2. Special features of Hills of Uttarakhand :

There are 13 districts in this state out of which 9 are totally hilly, two namely Haridwar & Udham Singh Nagar in Plain area and Dehradun is Partly hilly and partly in raised Doon Valley. The elevation above sea level varies from 300 m to about 7800 m. The varying altitudes give rise to vast variation in its floral & faunal forms resulting in very rich bio-diversity. The State has Trans Himalayan, Himalayan and Indo-Gangetic plains as its biogeographical zones. Jaunsar Bhabar in Dehradun district is a tribal area. The forests comprise of Reserved Forest (RF) under the control of State Forest Department Civil & Soyam Forests (C.S.) under the control of district administration and panchayati Forests or Van Panchayats carved from CS & RF under community control. Dependence of local people specially in 9 hills districts and Jaunsar & Bhabar area of Dehradun district, on forest for their fuel wood and fodder needs and also for timber for house construction of cowsheds and making of agricultural implements is near total. The forests also sustain the water spring vital for the drinking water supply of the rural and urban people. Some of the notable features of these hills are:

1. High Percentage of forest area interspersed with agriculture and habitations.
2. Water availability depend on forest cover
3. Forests provide irrigation and power to vast population of Indo-Gangetic plains of the country.
4. Forests influence global climate.
5. High dependence on forests for fuel and fodder.
6. Availability of fuel and fodder in market nil except for large cites and towns.
7. Rights and concession from forests available to people living in vicinity of forests.
8. Economy is women driven. Most able bodied males in services outside state.

9. Due to cold climatic conditions, regeneration and reforestation on elevations above 3000 ft. very slow and degradation due to biotic pressure very fast.
10. Existence of rain shadow zones, fragile ecosystems, high rainfall during rainy season resulting in cloud bursts and high erosion.
11. Land holding scattered and small which compels traditional subsistence farming. Mostly rainfed farming and high erodibility of terrace fields.

3. Community efforts in forest management at national level :

Prior to British rule the forests were by and large owned by the Kings and Jamindars under whose possession they were. Even if there was any effort by communities it was only at the mercy of the ruler. During British rule large chunks of forests were reserved under Indian Forests Act 1864 & 1927. In many areas forests in the vicinity of villagers were left unreserved for meeting the day to day needs of the local communities but there was hardly any management by the communities except regulation and distribution of the produce. During reservation process wherever the rights of villagers were curtailed or stopped in the adjoining forest, it was met with dissatisfaction from villages.

The first National Forest Policy was declared in 1894 in which very high priority was accorded to community benefits. This was revised in 1952 according to which the village communities in the vicinity of forests could naturally derive greater benefits from them for their domestic and agricultural needs but claim of communities at the cost of National interest were not be permitted. There was yet another revision of the NFP in 1968 which marks a major departure from the earlier policy which was primarily production oriented. It lays emphasis on meeting the social needs in particulars of tribal population and has laid stress on creating a massive people's movement with involvement of women, for achieving various activities and to minimize pressure on existing forests.

The forest were brought in concurrent list in 1976 and the historical Forest Conservation Act was promulgated in 1980 which is mainly responsible for saving the Forest Land which was being diverted for non forestry purposes by various State Governments. Another important Government of India's Resolution of June 1990 passed on Joint Forest Management which stressed active involvement of people. This Resolution prompted many states to issue JFM orders, though this was also a fallout of externally aided forestry projects which advocated JFM as main component of funding. West Bengal, MP and Rajasthan had some good success stories of JFM U.P. also implemented JFM, of which Uttarakhand was a part at that time.

4. Community Conservation in uttarakhand – The Van Panchayat Scenario:

Prior to British rule (1815) the forests were identified with the villages and the people had unlimited access to forests. In the later part of 19th Century and early part of 20th Century, the British rulers declared the forests land as Reserved and Protected forests and put restrictions to the rights of the local people. This led to great agitation by local people and they even set fire to large parts of the forests. As a result of the public agitation some reserved forest was converted to protected forest and in some forests close to the habitation Van Panchayats were constituted which were managed by the communities. Uttarakhand has the oldest history of community conservation in the country. Forests

Panchayats popularly known as Van Panchayats were formed in Kumaon & Garhwal as far back as 1930 even before independence. As many as 9 Van Panchayats were formed in Kumaon and 8 in Garhwal in 1930. After formation of separate Uttarakhand State there was a concerted effort to form Van Panchayats in more villages and the number of VPs went up by utmost 100% after formation of new state.

The present Status of Van Panchayats in Uttarakhand is as under:

- a) At present the number of Van Panchayats in all the hill districts of Uttarakhand is 12089 (5811 in Kumaon & 6278 in Garhwal) with a total area of 5450 sq. km. under them.
- b) Maximum number of VPs is in Pauri (20%) followed by Almora (18%) and Pithoragarh (14%). Dehradun, Nainital, Champawat, Rudrapur and Uttarkashi has only 2%, 4%, 5%, 5% and 5% VPs respectively. Tehri, Chamoli and Bageshwar have 11%, 9% and 7% VPs respectively.
- c) In terms of area of VPs 28% are between 0-5 hac, 31% between 6-15 hac, 26% between 16-50 hac and 15% above 51 hac.
- d) There are some VPs with large area such as Makku (Rudrapur) 2030 hac, Gaurikund (Rudrapur) 2006 hac., Ushada (Rudrapur) 1001 hac., Lankhi (Chamoli) 1249 hac., Kundi (Chamoli) 1024 hac., Ratgaon (Chamoli) 3434 hac., Urgam, (Chamoli) 2944 hac., Bhyundar (Chamoli) 22960 hac., Mana (Chamoli) 68719 hac., Tolma (Chamoli) 18663.5 hac., Lata (Chamoli) 1071 hac., Malari (Chamoli) 8334 hac., Lward (Nainital) 1024 hac., Bahanargaon (Pithoragarh) 16204 hac., Rankot (Pithoragarh) 7460 hac., Saurag (Bageshwar) 3674 hac., Khati (Bageshwar) 1784 hac., Mazkot (Bageshwar) 1452 hac., Dyuri (Champawat) 5240 hac., Begedi (Champawat) 2484 hac., Most of these are situated on higher elevation and many have high altitude grazing lands (Bugyals) included in them.
- e) Over 800 VPs are less than 2 hac., Out of which over 300 are less than 1 hac.
- f) Out of 12089 VPs only about 25% VPs have some money in their A/C rest do not have any amount in their A/Cs which indicates that only about 25-30% VPs are active.

5. Local Efforts in Community Conservation : (Some examples)

Some of the glaring examples of community conservation efforts at local level in the state of Uttarakhand are being briefly given here. Some of them like Chipko movement assumed international significance and some people like Gaura Devi, Chandi Prasad Bhatt and Sunder Lal Bahuguna shot to international fame.

1. Chipko movement started by Gaura Devi and other women of village Reni in Chamoli district in seventies. As a result of this movement a total ban on green tree felling above 1000 M elevation was imposed by Govt. of UP in early 80s which is being followed even now.
2. Women folk of village Makkumath in Rudrapur district participated in management of VP and raised 6000 hac. of plantation for improving density of VP by planting Oak, Rhododendron, Alder, Surai etc in late eighties.
3. In village Koti of district Chamoli community land was distributed among

villagers for planting and protection and usage of produced Fodder grasses. Fodder trees like Bhimal, Kharik and Kachnar were raised successfully and villagers become self sufficient in their fodder demand.

4. In village Dakyat of Uttarkashi district the badly degraded village forest was protected by common efforts by stopping grazing and guarding the land. This resulted in regeneration of good forest capable of meeting out most of their daily demands.
5. In village Bachhed in Chamoli district, the women from 200 house holds of the village took up responsibility of Management of Van panchayat. This was possible after a village women Mrs. Kala Devi orgained the village women and elected women Sarpanch of Van Panchayat.
6. At individual level Sri Vishweshwar Dutt Saklani of village Saklana of Tehri district has planted and protected large number of Oak, Rhododendron, Deodar and other trees in his village common land and adjoining Forests area for over 30 years. It is now dense forest capable of meeting demands of fuel and fodder of the village if properly managed.
7. Sri jagat Singh "Jangli" of Village Kot Talla in chamoli district has raised a model miscellaneous forest in V.P. land has been able to protect it for last 25-30 years.
8. In early 1980 the women of village Dungari – Lantoli of district Chamoli agitated against felling of a Oak forest near their village and opposed the men folk of the village who were co-operating with the department and contractor. They successfully stopped the felling.
9. Women of village Khirakot of Almora district guided by a volunteer organization "Mahila Mandal" with co-operation of male members of the village protested actively for cancellation of a private mining lease for extraction of Gypsum. Ultimately the lease was cancelled and the 80 hac. The V.P. is in good condition due to engagement of a chowkidar by villagers.
10. In District Tehri where Van Panchayats were formed very late due to the land being under Princely State of Tehri, in large number of villages the forest near the village was protected by villagers by putting a chowkidar on contributed out of his award money for chowkider's wages, provided similar amount was also collected by the villagers.

6. Legal Provisions :

The legal provisions in IFA 1927, UP Panchayat Raj Act 1947 and Van Panchayat Rules made there under are listed below-

(x) In the Indian Forest Act 1927, Van Panchayats have been recognized as "village forests" and UP Van Panchayat Rules 1976 made under the Principal Act provide the legal protection.

(y) Van Panchayat Management Committee is a institution of Panchayati Raj which is constituted under article 29 (6) of U.P. Panchayati Raj Act 1947 in which the village Panchayat has power to constitute Sub committee for carrying out its duties.

(z) Uttarakhand Van Panchayat Rules 2005 were notified on 23-1-2006 superceding Uttaranchal Van Panchayat Rules 2001 and Uttaranchal Village Forest Management Rules 2001. Van Panchayat or Panchayati Van (Village Forest) Management committee consitituted under these rules will include Van Panchayats constituted under Van Panchayat Rules 1931, 1976 and 2001.

The Van Panchayat Rules 2005 have following important provisions which strengthen the Van Panchayats:

- Constitution of Van Panchayat
- Usufruct rights and duties of user
- Constitution of Management committee
- Preparation of Management Plan concerned Divisional Forest officer
- Preparation of a Micro plan
- Utilization of Forest produce
- Duties and rights of Management committee
- Duties of VP Sarpanch
- Maintenance of Income and Expenditure A/Cs
- Management of village Forest Funds
- Maintenance, distribution and utilization of net profit from Forest Produce.
- Budgeting, Accounting and Auditing
- Inspection of working of Management committee.
- Constitution of Regional, District level and State level Advisory Committee.

7. Some Important lessons for Policy Making on community Conservation in Uttarakhand :

Some Important points which will help in Policy Making on community conservation are being listed below.

- 1) In Uttarakhand, no Joint Forest Management (J.F.M.) experiment other than the Van Panchayats should be attempted. The JFM areas taken over during World Bank aided project prior to formation of Uttarakhand have ceased to exist after the project phase was over. I had the opportunity to monitor some 12 such areas in Kumaon and Garhwal Taken up for study by FRI and it was found that even the revolving fund created during project had been misappropriated and no accountability could be fixed.
- 2) Van Panchayats with areas less than 2 hac. Cannot serve the purpose of supplying usufructs to the villagers excepts for fodder grasses and intensive cultivation of medical and aromatic plants. These areas can be conserved as Biodiversity rich community conservation areas with the encouragement of State Govt. These areas can help in Water conservation and carbon sequestration apart from conservation of floral and avi faunal diversity.
- 3) There are some VPs with very large area which are not within the management capability of Van Panchayat committees. These are mostly on higher altitudes where natural production of medicinal plants have great potential. At present they are badly managed. The Management Plan of these VPs needs to be immediately drawn up by Forest Department (F.D.) and some Local NGOs or Research Organizations can be intrusted with implementation of the Management Practice in agreement with the Management Committee of V.P. Part of it can also be made conservation Reserve under Wildlife Protection Act, 1972.
- 4) According to Uttarakhand Van Panchayat Directory 2007 only about 25% Van Panchayats have some kind of fund in their account though many have less than 500/- as VP fund. It either indicates scarcity of fund in majority of VPs or absence of any kind of

management practice in them. Now that there is a PCCF Level officer in FD to look after VPs exclusively, it would be necessary to scrutinize all VPs closely, prepare their MP and arrange initial funding to make them viable. The Watershed Management Directorate under various externally aided projects has been carrying out afforestation and soil conservation activities in villages. These activities even when carried out in RF could be entrusted to nearest VPs with proper agreement so that VPs could be strengthened. Other activities in the nearby forest such as plantation, rejuvenation and augmentation of natural water sources, fire protection, soil conservation works etc. could also be done by FD through VPs.

- 5) Van Panchayat could be a great source of funding under carbon credit scheme. There is a positive talk of compensation of forest rich states by Government of India. A comprehensive project of Van Panchayat development and management could be prepared which could be run with the help of such compensation fund.
- 6) Large funds are being generated under compensatory Afforestation in the State. Most of the forest land that is diverted for development projects is in the vicinity of villages who are adversely effected by such transfer of forest land. Funds generated under this could be suitably utilized to strengthen and manage the Van Panchayats.
- 7) While drawing up management plans of VPs provision for supply of cooking gas and solar equipment must be made so that dependence on fuel wood becomes minimum.

RARE SNOW LEOPARD SPOTTED IN CHINA

Beijing : Rare images of the snow leopard have been captured in the Tianshan Mountains in northwest China's Xinjiang province after a gap of over 10 years, researchers said on Wednesday.

The images of three snow leopards were captured by infrared cameras installed in the western and central Tianshan Mountains in Uygur Autonomous Region, researchers with the Xinjing Institute of Ecology and Geography of the Chinese Academy of Science said.

It is the first sighting of the rare animal in the area in 10 years. The pictures were taken within a 1,000 km. range. Two snow leopards were spotted near a water source and another was seen at an altitude of 1,680 metres.

Snow leopards, one of China's Class A protected animals, are usually found in the Himalayan rangers of central and south Asia at altitudes between 3,000 and 5,500 meters, state-run Xinhua news agency reported.

A total of 50 cameras sponsored by Snow Leopard Network were set up in the area at the end of last year in an initiative to protect the species.

According to researchers, the pictures indicate an increase in the number of snow leopards within the area as well as a balanced ecosystem.

The Hindu, March, 12, 2015 (Courtesy - Dr. S.P. Singh)

ABOHAR WILDLIFE SANCTUARY-AN UNIQUE EXAMPLE OF COMMUNITY DRIVEN CONSERVATION PROGRAMME

A.S Negi, Dr. S.N. Prasad, Dr.A.M.Dixit

World over, that has been a strong and growing emphasis being given to new paradigms of conservation. The old model of state supported 'hands off Wild Life and nature conservation is being questioned by a variety of stakeholders. Alternate strategies include the community approach for conservation. India traditionally has been in the vanguard of community driven natural resource conservation. However, over the past couple of centuries, this tradition has weakened considerably. There are however many good examples of these conservation Strategies. This article reports such an effort in Punjab where today the Blackbuck's western most distribution ends.

Abohar is a small town in western Punjab situated in Firozpur district. It is close to the State boundaries of Rajasthan and Haryana. The countryside has intensive agriculture, as in rest of Punjab. Of late, large number of Kinnu (A sweet citrus fruit developed by crossing two species) orchards have come up in the surrounds of Abohar. Irrigation which was scarce only a decade ago has improved substantially with network of canals.

Management Effectiveness Evaluation

I, alongwith my two scientist colleagues, Dr.S.N. Prasad from Hyderabad and Dr.A.M.Dixit from Ahmedabad were entrusted with an evaluation of Management Effectiveness of Protected Areas of Northern India by ministry of Environment and Forests, Govt. of India and Abohar Wildlife sanctuary (WLS) of Punjab was one of the six areas allotted to us for evaluation during 2010. All three of us met in Delhi and proceeded for Abohar by road.

Though Management effectiveness of 11 protected areas had been evaluated before taking up this Sanctuary. Nevertheless, we were excited to visit and know about Abohar W.L.S. as it was situated in the revenue land owned by farmers with little community land no forest land within its boundary. At Abohar, we were joined by D.F.O. Wildlife Firozpur district and Range Officer Incharge and field staff of Abohar WLS. Next morning, a guard met us at the Guest House who gave us certain literature comprising of 363 Vishnoi martyrs of Chipko movement of KHEJDALI village in Jodhpur Rajasthan and some other information about Vishnoi culture. The Forest Guard himself was a Vishnoi from one of the villages comprising the Abohar W.L.S. It was pleasure to talk to him and see his commitment towards conservation. He was grandson of Late Sri Sat Kumar Vishoni, a well-respected person who was President of "All India JeevRaksha Vishnoi Samaj", and a winner of Indira Gandhi Paryavaran puruskar. He was also the first Honorary Wildlife Warden of Abohar W.L.S. and has spearheaded the creation of Abohar W.L.S. His statue (Bust) stands at one of the important road crossings in Abohar town as mark of respect to him. Later on we were joined by DFO/RO and others for the field visit of the day. When we left for the field visit, surprisingly the Vishnoi Forest Guard who met us in the morning was missing. We were told that he was

asked to stay away from our field inspection. The DFO and Forest Ranger briefed us about the Wildlife Sanctuary. We were told that the Vishnoi's are erecting mud walls and barbed wire fences around their fields. We were given the impression that the Vishnois no longer interested in protecting "Black Bucks" and Blue Bulls and have infact turned against them due to damage to their crops and orchards. With this background in mind we set out to visit this unique Sanctuary.

About Abohar Wildlife Sanctuary with Total Protection Extended by Vishnois

Abohar WLS was created in 1957 in 13 of the 16 Vishnoi close to Abohar township. Other 3 villages are not contiguous with these 13 villages being situated some distance away with non Vishnoi villages in between. Vishnoi villages are inhabited predominantly by Vishnois with other casts as well. Vishnois in these villages own major landholdings. Most of them have good agriculture mostly irrigated. Community land has been encroached by influential farmers. The area of the Sanctuary is 186.15 sq km. With no forest land within the Sancturey. As we entered the Sanctuary, we could see "Black Bucks" in small groups or single males in wheat fields or barren lands. The encroachment of community land has shrunk the Black Buck habitat particularly during farming season. The spread of Kinu orchards surrounded by walls or barbed wire fences have also contributed to shrinkage of their habitat. There are several ponds in the villages connected with Canal water that have good population of fishes, some of them growing to large sizes, mostly various species of Carps. The villagers are totally vegetarian and do not kill fish at all. We did see large number of street dogs most of them with robust health. They must be chasing wild animals. When there is no water to be irrigated, then the canals dry up and animals feel scarcity of water and have to visit village ponds etc. The "pinch period" may be around 2 months in a year. We saw heads of Blue Bulls/cows in wheat fields at several places, some very close to habitation. Black Bucks at this point of time were mostly seen on barren lands whereas the blue Bulls /cows were seen in wheat fields.

As the first impression, we did feel that the Vishnois have changed their attitude towards wildlife but during our two days visit when we interacted with a number of villagers not one of them talked about the damage to their crop and property by wild animals. In Past, damage to crop was not at all an issue with them. Protection of orchards and ripe fruits, to minimize damage is fully justified. This is resorted to by farmers even from their own tame cattle. No farmer will ever let their own cattle loose in their field when the crops are ready for harvest. It will be too much to expect them not to fence their fields against these wild animals who go in herds and raid the crops and leave little for harvesting. The Farmers never grudge the damage is evident from the fact that they have never raised a demand to be notify the Sanctuary or ask for permission to shoot Blue Bulls/cows which is an usual practice in the past in our country. On the contrary, the Sanctuary has been created on their initiative and they are continuously demanding that the other 3 Vishinoi villages left out from the W.L.S. should be included in the Sanctuary or a separate Community Conservation reserve should be created in these villages. We met a local political leader, some ex honorary W.L.W.'s. and member state Wildlife Advisory board from among the Vishnois and to our utter surprise they informed that

they have always opposed the demand of shooting Blue Bulls/cows by farmers elsewhere in the State. They are even opposed to payment of compensation for crop damage, a demand so repeatedly raised all over the country.

Interacting with Vishnoi Farmers in one of the villages was an eye opener and inspiring. All elderly people were of the view that in their 16 villages, their crops have never been damaged by natural calamities like hailstorm etc. They sincerely believe that is the compensation provided by God for their tolerance towards wild animals. They feel that at least 10% of everybody's earnings should be given in alms for good cause and their crop damage never exceeds this limit. One family head took us to the grave of his father close to their house and pointed out that a Black Buck always comes and rests near the grave. He pointed out to the browsed wheat plants as evidence near the grave. They were feeling highly obliged to the animal who paid regular visit to the grave of their respected father who himself was a great conservationist and true Vishnoi, Vishnois inspite of following Hindu religion burry their dead ones to save the wood that is in cremation of dead bodies. One of the young boys of the family who was studying for his graduation in Jammu had come on leave for attending marriage of his brother. I raised a question about whether his commitment to his culture was being diluted in the company of others while living out the community. He very firmly said that he never befriends those who are non-vegetarians neither he even takes a room with non-vegetarian family and totally avoids eating place where non vegetarian meal is served. I felt very small by doubting this Youngman. The family's hospitality and love was so touching that we did not like to leave their company and had two rounds of tea and porridge offered by them. In another village we witnessed a house wife and a young girl standing on the courtyard watching 5 Bulls feasting on their wheat crop which was almost ready for harvest. They were laughing and not driving them away. A site was very unusual for a farmer's family.

Nobody from within the villages or outside can ever dare to poach wild animals in the Sanctuary without inviting the fire and displeasure of Vishnoi. They take out their guns and chase them away or snatch their firearms and inform the Forest Guards immediately. They provide tractor or any other available vehicle to forest people for carrying injured animals or transporting offenders or chasing them. Even in the peripheral villages the Vishnois keep an eye on poachers and pass on information to forest deptt.

The Attitude of Forest Department

The villagers had no grudge from the local forest field staff but they were very critical of the attitude of department at higher level. The grudge seems justified as the budget provided by Govt. of India for the Sanctuary. There is independent Forest Ranger for the Sanctuary. There is no honorary Wildlife Warden appointed for this unique Sanctuary which is mostly managed by the community. Even after 35 years of notification of the Sanctuary there is no management plan. The vehicles are out of order for several years. The Veterinary hospital provided for the Sanctuary is not functioning properly. The only Vishnoi Forest Guard of the Sanctuary is facing disciplinary action for advocating the cause of the Sanctuary. The management at higher level instead of

appreciating the commitment of Vishnoi community towards conservation and wildlife protection is trying to doubt their sincerely and defame them.

Looking at the dismal picture on the part of Govt. Department, we were as a Committee entrusted with management Effectiveness Evaluation made certain recommendations outside the frame work of evaluation, to M.O.E.F., G.O.I. to make this Sanctuary as an example of Community Management being set by Vishnois who are known for their total commitment for conservation. Most of them live in Rajasthan but some also reside in Punjab, Haryana, M.P. etc. The history of their conservation culture dates back to 1730 AD when 363 Vishnoi men and women laid their lives to prevent felling of Khejari trees (*Prosopis cineraria*) by the Army of King of Jodhpur Marwar. The women first to lay her life was Amrita Baniwal with her three young daughters. Several examples of sacrifices by Bishnois for conservation can be found. Latest example is the sacrifice of Birbal Ram of Lohwat village in Jodhpur district, who faced bullets of poachers to save a black Buck on 17th September 1977. The cases of Salman Khan and Nawab of Patoudi facing legal action for poaching Bucks made headlines in National Newspapers. The case of Salman Khan relates to poaching of Black Buck (schedule I species) in Vishnoi area of Rajasthan in which there was a Vishnoi witness who stuck to his statement till last, which resulted in prosecution of the accused.

Spiritual/religious aspects of wildlife conservation

The Vishnois draw their inspiration from Shri Jambheswar Ji Maharaj who is worshiped by the community as their spiritual Head and God. An annual fair at a place in Rajasthan draws Vishnois from all the country and it is in this that their commitment to conservation is renewed year after year. This community is totally committed to conservation even in a world of consumer culture. Their 29 points code of conduct enunciated by Jambhoji Maharaja is religiously followed by all Vishnois. What Vishnois follow is need based but what most other follow is greed based. Inspite of the numerable examples being set by this community from time to time, we are not able to follow even few of the codes of conduct that they follow. It would seem that a variety of approaches steeped in spiritual/religious, economic incentives, education and administrative measures are needed to stem the alarming decline of wildlife in the country.

WRITING AN EPITAPH FOR THE MAHSEER

Dr. A.J.T. Johnsingh & A.S. Negi

One of the fascinating narrations of Jim Corbett in his Book: 'Man-eaters of Kumaon' is about his fishing for mahseer in a river which flowed for some 60 km. through a beautifully wooded valley teeming with wildlife. When Corbett was fishing, the air was filled with the fragrance of flowers and the spring songs of a multitude of birds. Corbett opined that angling for mahseer in a submontane river in such an atmosphere is a sport fit for kings.

After catching a 50lb. mahseer, Corbett concluded that he might soon forget the weight of the fish, but the sublime surroundings in which he had caught it will not be forgotten and will draw him back to that beautiful valley as yet unspoiled by the hand of man. His descriptions fit well with the Ramganga Valley in the Corbett Tiger Reserve (1,400 sq.km.) which is still one of the few strong holds of mahseer in India. The Corbett Tiger Reserve has a core area of 520 sq. km. which is managed as a National Park; the rest is the buffer zone.

The mahseer is a fresh water fish that can attain a huge size. In the past mahseer of 70-80 kg. have frequently been caught and it has been reported that the fish can grow to weights exceeding 100 kg. The only other fresh water fish comparable to mahseer in weight in India is the goonch. (*Bagarus bagarius*) which also thrives in the Ramganga. The mahseer shows more sport for its size than a salmon and therefore is considered the best sport fish in the world. As most mahseer take the bait quite avidly, an erroneous impression has gained ground that they are carnivorous and rapacious. But studies have shown that they are omnivorous and take almost anything-weeds, snails, crabs and live fish. The etymology of "mahseer" suggests that the word could mean a fish with "lion's gameness", "big scaled fish", "large headed fish" and "fish par excellence."

Mahseer inhabit most rivers and reservoirs throughout India, Pakistan, Nepal, Bhutan, Bangladesh, Burma and Sri Lanka. Mahseer experts have recognized six to eight species in India but no detailed information on the present status and distribution of each of these species is available. The mahseer occurring in the Corbett Tiger Reserve is the golden mahseer (*Tor putitora*) which is found in river Ramganga and which weights upto 25 kg. The different species of mahseer inhabit varied habitats ranging from tropical waters where the temperature in summer goes up to 35 degree Celsius to Sub-Himalayan waters where the winter water temperature drops close to zero degree Celsius. Similarly mahseer are found in streams a few meters above sea level and in streams at altitudes of 2,000m.

Although accurate data on the catches of mahseer for different parts of the country are not available, comparison of figures from a few isolated surveys as well as observations of anglers and biologists indicate that there is a serious decline in the abundance of mahseer. The decline is generally due to a combination of factors such as unchecked and indiscriminate fishing, dynamiting and poisoning which even destroys brood fish and juveniles. Pollution and silting of rivers and construction of dams have impeded the migration of mahseer which is crucial for spawning.

Unfortunately mahseer, when compared to other commercial fish are prone to depletion and extinction. One of the prime habitat requirements of mahaseer is clean

water which is nearing extinction. Mahaseer need to reach their favoured spawning grounds which have to be fraught with risks and dangers. The fecundity of mahseer as compared to the commercially exploited species is very low. For example the Deccan or khudree mahseer (*Tor khudree*) has 6000 eggs/kg./body weight as compared to 2,61,000 eggs per kg. body weight of rohu (*Labeo rohita*) and 1,33,000 eggs/kg. body weight of (*Catla catla*). The eggs of mahaseer are capable of sinking in the river bed, and, therefore, if there is mud on the bed instead of sand or gravel, they can sink and perish. The hatching period of khudree mahseer is 60 to 80 hours and of Golden or Himalayan mahseer 80 to 96 hours compared to 18 hours for catla and rohu. Further the semi quiescent stage soon after hatching is three days for catla and rohu and six days for khudree mahseer. All these imply that mahseer is more vulnerable to all forms of decimation, and if it has to survive throughout its range, there is an urgent need to plan and implement conservation measures.

Ramganga River, where Corbett would fish for his dinner, sometime in the early part of this century, has undergone a major change due to the construction of dam at Kalagarh in the late Sixties and early seventies. As a result the water in the reservoir now spreads for about 60 sq.km. in summer and 80 sq.km. soon after the rains in July-August, inundating nearly 16 km. of the river from Kalagarh to Dhikala. The 22 km. stretch of the river from Domunda, where it enters the National Park, to Dhikala, remains what it was a hundred years ago, with abundant wildlife on both the banks. Mahseer fishing in the reserve is permitted in the Ramganga upstream of Domunda, in the Mandal draining the Mandal valley north of Kanda and in the Kosi upstream of Kumaria. All these fishing sites are in the buffer zone of the Reserve. The most important rivers in the Reserve where mahseer spawn are Ramganga, Mandal and Palain. Spawning occurs largely in August.

We had always wanted to fish in the Mandal and we did so in mid July 1996. After obtaining permits, we drove from Dehradun to Rathwadhab on the bank of the Mandal on the northern periphery of the Reserve accompanied by 72 year old N.S. Negi, who has fished extensively in the Mandal until 20 years ago.

When we reached Rathwadhab, cotton-white clouds drifted over the emerald green forests. Paddy was being planted in the terraced fields. Copious lime-white water flowed in the river. All this indicated that the monsoon had set in a few weeks ago. We were tempted to go fishing that warm and sunny afternoon.

Negi took us straight to the confluence of the Kateur and the Mandal where, 20 years ago in July, he had caught several fish each weighing over 10 kg. The confluence is about 10 km. from Maidaban where the river enters the forest. Houses amid paddy fields were sparse on the banks of both the rivers. Several boys were playing and swimming at the confluence and two of them had improvised fishing equipment. They had not caught any fish that day. They also said that the largest they caught this season weighed two kg. In spite of my attempts, with the best fishing gear available in the market, we could catch only one fish which weighed around 500gm. We moved further up the river from pool to pool but all were empty. We met one boy, about 14 years old, adept in crossing the river to use his fishing gear. On seeing our disappointment, he said that the depletion of fish was due to dynamiting which was done almost every day from July to September. He added that the poachers did not come that day as they had heard about our coming.

By this time the sun had set, the light was fading fast and the common hawk cuckoo or the brain fever bird was calling repeatedly.

Already the news of dynamiting in a river that flows thorough a protected area of the country had created an atmosphere of gloom for us which was aggravated by the pining call of the bird. We had been under the illusion that the Mahseer in Corbett Tiger Reserve is safe from such vandalism. The next morning we drove along the river for 13 km to fish at the confluence of the Kali and Mandal, far from human habitation. The water in the Mandal was warm, while that of the Kali, which springs out of a deep, well wooded valley, was cold. Although such spots are ideal fishing sites, the largest fish that we caught weighed just close to two kg. The giant Mahseer of yesteryear were totally missing. Suddenly the serenity of the setting was disturbed by the ominous appearance of 10 men who came up the river. We watched them with abated breath. About 200 meters away they dynamited a large deep pool with formidable rapids. We moved towards them and they slunk away. Dead and dying fish drifted along the river.

In the evening, sitting on the lawns of the Rathwadhab rest house, we discussed the problem with some village elders and the forest staff. We realized that dynamiting, which kills even small fish, has been going on for the last 10-15 years and surprisingly no one thought it was an inhuman act. One elder talked about abundant fish in the past, between July and September. He said sufficient oil for burning lamps in the valley was obtained by smoking the fish. He concluded that if his generation was well built, healthy and intelligent it was because they ate plenty of fish in their younger days for about three months every year.

The discussions revealed that even other Mahseer spawning habitats – Plain and Ramganga were not safe from dynamiting. In addition fish in the Ramganga reservoir also suffered heavily due to illegal netting. All this pointed to a bleak future for Mahseer in Corbett, the pride of India's protected areas.

We went to bed very late but sleep evaded us for a long time. The vision of the agile boy unsuccessfully trying to fish. The men dynamiting the river and dead fish floating down the river repeatedly came to our mind.

We are involved with a conservation initiative called "Operation Eye of the Tiger". This has been formed to save the tiger, its habitat and allied species. We have decided to use this programme to forge a link between the people and the Forest Department and evolve a conservation programme to protect Mahseer when it comes to Mandal Valley for spawning.

The plan includes giving water proof clothing to the staff to enable them to patrol even during the rains, and awards for meritorious service to controlling fish poaching. The women of the Mandal valley will be called for a meeting and told of the importance of Mahseer in the health and growth of their children. The help of women will be sought to protect the fish from dynamiting. The young boys and men of the valley will be educated about the evils of the dynamiting but will be encouraged to fish with line and Department will be requested to encourage more sport fishing, as the presence of sportsmen discourages illegal activities. The problem of poaching in the Ramganga and Plain rivers and in the Ramganga reservoir will be highlighted and controlled, to deter the onset of the bleak future of Mahseer in Corbett Tiger Reserve.

All this will have to be done urgently and effectively so that plentiful Mahseer start spawning in the Mandal River. The young boys will have great fun in catching the Mahseer and immense satisfaction in adding a valuable item to the family menu.

THE SARISKA FIASCO & AFTER

A.S. Negi, I.F.S.

The Sariska fiasco is a great cause of concern for all the conservation conscious people all over the world. It is not because a first ever noble project launched in the field of conservation, with initial success has suffered a setback, but because a big question mark has sprung up about the capability of the age old department of Forests who has been entrusted with the custody of most important of the treasures on the earth, that is forests and their inhabitants.

I have served the Forest Department for a long stint of 38 years including some exclusive periods of service in wildlife sector. During all my service, I never had any doubt on the capability and sincerity of our frontline staff provided they were led and guided properly. It is their commitment all through that we still have some good forests and wildlife with such a vast sea of underprivileged and poor population surrounding them. Then what went wrong and where? Why their sincerity could not be sustained and enhanced. It is because they were neglected not only by our overall system but also by their own masters. The debate could be very long and yet non conclusive and unacceptable to most of the people who matter. I would not like to dwell on fault findings and criticism of the service or degenerating political system, rather on something which can still be corrected.

Ministry of Environment and Forests, Govt. of India constituted Expert Committee to evaluate and monitor the Tiger Reserves of the country and I was one of the members of the Committee who had a chance to monitor 11 Tiger Reserves of the country out of 27 at that time. On the basis of experience gained during monitoring of these TRS and also on the basis of my personal experience in managing Corbett, the foremost TR of the country for a period of 5 years, I want to highlight some points:

1. Are we bothered about the Tiger Reserves (T.R.) under Project Tiger or about the Tiger itself? I think our approach should be holistic. Even after taking large chunks of Forest land, where tiger presence was sizable, under the Project Tiger (PT) we still had about 50% of the tiger population outside PT areas to begin with. It is an established fact that the population of wild animals has a direct relationship with vastness of undisturbed wilderness areas. It is more relevant to large mammals such as tigers, elephants, rhinos, bison etc. In the case of tigers, who are territorial in habit, a smaller area, howsoever protected and disturbance free it may be, its carrying capacity would be limited for tigers even when their prey-base is optimum in number.

In most of the Project Tiger areas, there is either absence of buffer, as it was in case of Sariska, or the buffer has too much of biotic interference and degradation and it is not being managed by the Field Directors of respective PT areas. The State Govts. have been very miser in handing over the management of buffer areas to the wildlife managers. There is a sharp difference of opinion among the Forest Officers themselves and the officers in charge of Territorial Divisions do not want to part with the territory traditionally held by them under their charge. The wildlife managers, though they come from the same service, are objects of great envy by their counterparts in the service. In

many States, in-charge of wildlife wing has been upgraded to the highest rank in the department but that too has not solved the problem.

At this time of tiger crisis a national strategy should be made to save the tiger along with whom many other lesser mortals of flora and fauna will also get protection.

All the areas bearing tiger population should be mapped and a Landscape Management Plan should be made for the clusters, which are in contiguity, treating PT areas as core of each cluster. The focus of management in these clusters should be tiger and all other practices should be strictly modified to favour the tiger and its habitat. If the cluster happens to be larger, then a Chief Conservator of Forests can be put incharge of the cluster who can coordinate the landscape plan with the management plan of the PT area and the Working Plans of adjoining Forest Divisions. As far as possible wildlife trained officers should be put incharge of the Forest Divisions falling in these clusters. Where such clusters are absent and the PT area is isolated, a different approach for these areas can be taken.

Where such clusters in spite of sizable tiger population have absence of Tiger Project, a suitable area should be included in the PT to improve and focus the management of tigers.

An effort to identify high priority areas and actions for the conservation of tigers in the wild has been made by the WWF-US and Wildlife Conservation Society on the global tiger range level and published in 1997. This effort is again on the landscape level, stressing the need that any conservation effort for the tiger has to be on a landscape level and can not be based on a strategy of isolated Tiger Project areas.

The landscape approach also ensures the long term conservation strategy through planned developmental activities in that area ensuring that the vital corridors and connectivities are not disturbed. Even the overall development activities in the cluster can be coordinated with the eco-development needs of that area.

2. Once the clusters have been formed, the Govt. of India would have to review its funding strategy under the PT and instead of funding individual PT areas, the clusters can be taken as funding units. This will also help the State Govts. to gear up their machinery, though the level of budget requirement could be on a much higher level. Without desired financial support from Govt. of India tiger conservation cannot be improved.

3. Tiger has not learnt the disturbance to its habitat and breeding pattern if it happened and consequently the population is adversely affected by biotic influences. It is therefore necessary to make all the core areas of PTs free from human disturbances. This is possible only by relocating the villages inside core areas. Though such areas have been identified for relocation outside TRs long back but the action at field level is very slow and detrimental to tiger population. During my visit to 11 Tiger Project areas in MP, Chhattisgarh, Orissa, Andhra and Maharashtra, it was observed that the relocation of villages from core of PT areas was facing uphill task. One major reason was non lucrative relocation package. Not only the relocation package needs to be revised by Govt. of India but one strong committee needs to be formed at the Govt. of India level to monitor this programme in all the States. Relocation is a sensitive issue with socio economic ramifications, so the people, will have to be given due weightage and the committee should also include members from concerned sectors of Govt. and NGOs. There should

be a time bound programme for relocation. The NPV (Net Present Value) being charged on State Govts for land transfer cases by the Govt. of India will have to be waived off as this is for the betterment of the environment and is one of the major causes for delay in relocation.

4. Eco-development programme in villages having influence over the PT areas is an important programme which is ultimately going to matter because without people's support tiger conservation like any other programme is not going to succeed. Eco-development should not be taken as pumping extra money in the area and increasing the purchasing power and changing the lifestyle of the people from sustainable to unsustainable. The entire development of the area should be such that dependence on forest resources decreases and awareness among people about conservation in general goes up. Also the vital corridors and connectivities are not disturbed. The funds being made available at the moment, by Tiger Conservation Authority (TCA) are very meagre and their utilization in isolation is not having any perceptible impact. In a cluster/landscape approach it will be easier to coordinate all the developmental activities in these areas under the District/Commissionary level Committee to be chaired by the Collector/Commissioner. The nodal officer would have to be the Field Director of the concerning PT.

5. Poaching and illegal trade of tiger parts is another major cause for decrease of tiger population. A National/International level network of trade already exists. The non conventional methods of poaching are generally being adopted and certain tribes/groups are engaged in tiger poaching all over the tiger range. The Forest Departments approach towards illegal trade and poaching all over the tiger range is totally regional in nature. Other law enforcement agencies are either ignorant about the modus operandi of poacher/traders or they are too busy with other more familiar forms of crimes that they have to deal. The gangs responsible for wildlife crimes are therefore in a better position as the law enforcement against them is concerned.

The creation of a 'Wildlife Crime Bureau' has already taken place at the Govt. of India level which needs to be strengthened further with Forest Officers of repute and experience at the helm of affairs. The State Govts should also set up some machinery in their police force with Forest Officers taken on deputation.

Some particular tribes are deeply involved in all wildlife poaching and trade. These should be identified and steps to rehabilitate them in alternative jobs/activities could be taken as a part of eco-development programme. Their modus operandi needs to be studied and strict measure to counter them at all levels taken.

6. Training is an important tool to improve the management. The country has Wildlife Institute of India responsible for training programmes for officers (Diploma and Certificate Course). So far only 756 officers (ERO & above) have been trained in these courses. Taking the total strength of forest officers, the number of trained officers is hardly about 10%. Not only the intake should be increased but some policy would have to be formulated at the Govt. of India level for sponsorship of officers for such courses and utilization of such officers after training by the State Governments. Forestry being a concurrent subject and the training being funded by Govt. of India, there should be no difficulty in doing so.

Training of frontline staff in wildlife has been neglected by almost all the states except M. & O. There are some training institutes specifically for wildlife training in some States and there are training centers in all States for training of Forest Guards and Foresters. Wildlife Institute could be asked to prepare a structured course for frontline staff of not less than 5 months duration for wildlife management. The training at State training centers could be made by Govt. of India for this purpose. This would be very important to keep up the efficiency and morale of frontline staff and to expose them to various Management practices being followed in different areas.

7. Census of tigers and other wild animals has always been a subject of controversy and the State Forest Departments have been following techniques of wildlife estimation differently though the general principle and guidelines may have been common. The estimation of tiger and their prey species should be done under the supervision of Committee of experts to be appointed by Govt. of India for each state comprising of experts, scientist, NGOs, media person, Hony. Wildlife Wardens and public representatives etc. All the field staff should be placed under the Committee for this purpose during census/wildlife estimation period on the lines of human census making Chief Wildlife Wardens of the States as the coordinators.

Wildlife estimation in MP and Orissa particularly in the Project Tiger areas has been streamlined and the level of accuracy was reasonably good. The credit goes to Shri H.S. Panwar and Late Padamshree Sri S.R. Chowdhary who worked hard to make the pugmark census, user friendly and reliable. In Simlipal TR of Orissa they had the practice of demarking the territories of Male tigers on ground with display boards as under.

This shows the seriousness of analysis of estimation exercise done in those days which appears very convincing. This exercise was also witnessed during census operation in Tadoba-Andheri TR visited by me as member of Expert Committee for monitoring and evaluation of TRs, where one Forest Ranger was trying to critically examine the territories of Male Tigers in his Forest Range. The presence of Research Officers of good repute in Kanha and Simlipal TRs for long periods has also been the factor for critical analysis of the annual estimation exercise, which was also followed up by the frontline staff during their routine patrolling. The collection of plaster casts and tracings of pugmarks found during patrolling and using them at the time of annual estimation exercise for authentication of results is also being followed in M.P. and few other States. These good practices should be followed in all the TRs and even outside for more reliable estimates.

Giving the exact numbers is also misleading. Only range of minimum and maximum estimates should be given instead of exact numbers (example 75 to 85 or 80 to 100 etc.)

The pugmark method of census was evolved at a time when the tiger numbers were thought to be reasonably on safeside. This method was used in tiger reserves which in early seventies and most of the tigers were then outside tiger reserves. The number of TRs increased subsequently and number of tigers outside these reserves declined very fast due to deforestation of habitats and lack of proper management strategy. After Sariska fiasco a task force was created by the Prime Minister on the recommendation of

which certain immediate remedial measures were taken. Creation of Tiger Conservation Authority and all India census of tigers by Ministry of Environment & Forests Govt. of India with technically guidance of Wildlife Institute of India in collaboration with Tiger states were positive fall outs of there recommendations.

The all India tiger estimation process consisting of various scientific approaches such as Double Sampling.

Use of Logistic regression

Occupancy modeling were used for finding of the refined all India Tiger estimation. This revealed the total country level population of tigers as 1411 (mid value) the lower & upper values being 1165 and 1657 respectively. The assessment is based on determining spatial occupancy of tigers throughout potential tiger forests and sampling such forest using camera traps on a statistical framework. This assessment, however, is said to be not comparable to the earlier total count using pugmarks owing to several shortcomings in the latter. The new findings indicate a poor status of tiger population in areas outside tiger reserves and protected areas. It is believed that the tiger population by and large, in tiger reserves and protected areas of such States are viable, while requiring on going conservation efforts.

8. Patrolling of Forests by frontline staff has been the backbone of protection mechanism. On foot patrolling alone can generate information from the field and it also acts as a deterrent against poachers provided that the patrolling party is strong enough and is well equipped and trained. Effectiveness of patrolling depends on the degree of supervision, planning and participation by officers. It has been felt that the patrolling is no more effective due to lack of supervision, planning and self participation by officers. The tradition of the department used to be like Army where even the highest officers used to visit interior areas frequently with their subordinates. The culture of patrolling the forests has to be revived at all levels by giving some incentives and devising ways and means to strengthen and sustain this age old good practice in the interest of conservation of not only the tiger but all other forms of flora and fauna. Regular refresher training course could also help to revive this great tradition.

9. Sariska tiger reserve in Rajasthan, which suffered a total annihilation of tiger population inspite of being managed as a Tiger Reserve for over 3 decades has now got one male and 2 female tigers relocated from Ranthambhor TR as a bold step in the direction of conservation efforts. Several initiatives have been taken by the state Govt. to ensure safety and security of relocated tigers and it is hoped that Sariska once again gains its lost glory and the relocation experiment can be used as an example in other areas where we have lost the tiger due to one reason or the other.

A SUCCESS STORY OF RELOCATION OF THREE VILLAGES FROM CORBETT TIGER RESERVE

A.S. Negi I.F.S.

Corbett National Park is the first National Park of the Indian Sub continent established on 8th August, 1936 under U.P. National Park Act of 1934 (An act specially enacted for this particular purpose). Dhikala and Boxar Chauras (grasslands) which are now in the core of the National Park were freed from agriculture and cattle as far back as 1861-62. In 1868 the area was handed over to Forest Department for management and it was declared as Reserved Forest in 1871. The idea of establishing a Wildlife Sanctuary in this area was first floated by Sir Michael Keen on 3rd Jan. 1907. Sir Malcolm Hailey, the then Governor of United Provinces proposed this area for Wildlife Sanctuary in 1934.

Initially the Park was 323.75 Km², which was extended to 520.82 Km² in 1966. Timber Operations were stopped in a radius of 5 km. around Dhikala in 1971-72. In 1975, after the filling for Ramganga Reservoir was completed, timber operations were completely banned in the National Park. Fishing as a sport was banned in 1987.

The ambitious conservation project, 'Project Tiger' was inaugurated in Corbett National Park on 1st April, 1973. On 11th June 1991, Sona Nadi Wildlife Sanctuary (301 Km²), remaining area of Kalagarh Forest Division (310 Km²) and adjoining portions of Ramnagar and Tarai West Forest Division (96.69 Km²) were brought under the management of Director, Project Tiger.

Background of Relocation of Villages.

When agriculture and cattle camps were shifted in 1861-62 from Dhikala and Boxar Chauras, perhaps these people were settled on the Kandi road now forming the southern boundary of the Corbett National Park, Dhara, Jhirna and Kothirao Villages must have come in existence around that point of time. Kandi road formed the geographical boundary of hills with the plains. When boundary of Corbett National Park was delineated under the guidance of Jim Corbett, care was exercised to keep these villages outside the boundary of National Park to avoid inconvenience to their inhabitants.

The Tarai Bhabar area south of Kandi road was then densely forested and there was mixture of grassland and miscellaneous forests in Tarai area whereas Bhabar area had dense growth of Sal dominated forests. Settlements in Tarai Bhabar area were then avoided due to damp and malarial climate and presence of excessive population of wild animals specially tigers and elephants.

Post independence period brought large populations of Sikhs from Pakistan, some of whom were allowed to be settled in Tarai area of Uttar Pradesh. Extensive deforestation took place and large chunks of wildlife habitat specially that of tigers and elephants were converted into agricultural land. The post independence development efforts brought roads, electricity, education and other facilities in these areas.

It was at this point of time when inhabitants of villages like Dhara, Jhirna and Kothirao (Garhwal) and Laldhang (Nainital) in the south of Corbett National Park and Taria and Kanda (Garhwal) in the north of Corbett National Park started feeling

inconvenience due to the presence of dense forests all around them. Their development could not keep a pace with villages in Tarai, which had come up much later. The formation of National Park and conservation of flora and fauna only added more difficulty for them as their agricultural crops were raided and incidents of man-animal conflicts increased substantially.

The first request for relocation of an area close to Kalagarh Dam Colony was made by some villagers of Dhara, Jhirna and Kothirao in 1973. The Village Panchayat of these villages passed a resolution in favour of relocation on 18.9.1976. The Govt. of U.P. constituted a committee of local MLA, DFO, Tarai West Forest Division and Field Director of Corbett Tiger Reserve in July 1977. Conservator of Forests, Western Circle was later co-opted in the committee. Relocation of village tarai on northern boundary of Corbett National Park was also proposed but the villagers did not agree for the relocation and it was dropped on their request. Later in 1978 villagers of Laldhang village of Nainital district close to Kothirao village, also requested for inclusion in the relocation scheme, which was agreed.

In a high level meeting held on 29.4.79 and headed by Addl. Chief Conservator of Forests (Kumaon) and attended by concerning MLAs of Garhwal and Nainital districts, Field Director, Corbett Tiger Reserve, DFO, Tarai West Forest Division and Pradhans of the concerned villages, it was decided that the relocation package will include exchange of private land with equal land at new site and no extra land would be given for community purposes and also no land would be given in exchange of encroached land. Initially Guljarpur Forest Block was proposed but later Ampokhara block of Tarai West Forest Division was proposed, which was approved by Govt. of India in 1982.

It was later felt at UP State Govt. level in 1982 that dense forests of Ampokhara block would be sacrificed, so some other site with less vegetation should be selected. This decision was taken in a meeting held on 30th June 1982 under the Forest Secretary, U.P. Finally Ampokhara (part), Manpur-Firozpur and Pratap Pur blocks of Tarai West Forest Division were proposed.

All the 4 villages wanted to settle in Ampokhara Forest Block due to its nearness to main road and proximity to Ramnagar town. This led to delay in approval of the proposal by Govt. of India.

I took over as Field Director of Corbett Tiger Reserve in Nov. 1989. I was approached by one gentleman Mr. Jaswant Singh of Village Jhirna, who had been working hard to get an approval from Govt. of India and was running from pillar to post between Delhi, Lucknow and Ramnagar. His main problem was to make the villagers to agree to a formula for distribution of land to the 4 villages in the 3 different forest blocks. This led to an impasse, which continued for 8 long years.

The Relocation Process.

A meeting of all 4 villages was arranged at Ramnagar on 4th July, 1990, which was attended by a large number of villagers from all these villages. There were serious differences among villagers regarding allotment of land at new sites and all of them wanted allotment only in Ampokhara Block. With great debate and persuasion of about 7 hours they could arrive at a formula agreeable to all of them. They finally signed the agreed arrangement. In this meeting it was also unanimously agreed that the proposal for

Garhwal and Nainital district should be submitted separately. Two proposals were thus submitted to Govt. of India through state Govt. U.P. for Dhara, Jhirna and Kothirao villages of Garhwal district and another for Laldhang Village of Nainital District.

Mr. Jashwant Singh of Village Jhirna made extra efforts to pursue the matter at Govt. of India level as a result of which proposal for relocating Dhara, Jhirna and Kothirao Villages of Garhwal District was approved by Govt. of India in May & July 1992. Govt. of U.P. issued sanction in Nov. 1992. After the sanction, villagers of these three villages were apprehensive about just and equitable distribution of land at new site among different individuals. They had reservation from Revenue officials. They also had differences about allocation of land in different Forest Blocks to different villages or group of families from these villages. I was asked to intervene at every stage. Series of meetings with villagers almost one meeting every month had to be called to sort out the differences. A large number of people were absentee landlords but once they came to know that the matter of allotment of land close to a highway and near Ramnagar/Kashipur towns was about to mature they also became active and started exerting their influence to get land at best place. This added fuel to the fire. I had always been advising them to sort-out matters among themselves and not allow intervention of Govt. departments. Though help of Revenue Surveyors was sought but the actual distribution of Forest Blocks and individual holding in a particular Block was done by villagers themselves. This process made a fair adjust distribution of land among the villagers and they finally moved on to the new site in May 1994, which coincided with my transfer from Corbett Tiger Reserve (In June 1994). The proposal of Laldhang village of Nainital district had some technical difficulty due to presence of some so called landless people and the matter remained pending at the Govt. of India level for another almost 6 years.

Relocation Package

As mentioned earlier, the Villagers had initially agreed for exchange of equal land and at that time no other facilities were demanded nor the state Govt. had made any commitment. Meanwhile, relocation of villages had taken place in Kanha Tiger Reserve in M.P. and some other places where Govt. of India had offered some package for relocation of tribal villages from Tiger Reserves. Govt. of India was initially reluctant to give any financial help for these non-tribal villages but on strong pleading by the Field Director it was finally agreed to offer the same package to them, which was offered for tribal villages.

Each family was granted Rs. 10,000/- for construction of a hut, Rs. 1,000/- for transportation of household goods and Rs. 2000/- per hectare for leveling of land at new site. Funds were also provided for drinking water (Rs. 50,000/- per village), approach road (3 km. @ Rs. 25,000/- per km) and cattle pond (Rs. 30,000/- per village). At local level the Field Director, Project Tiger arranged land leveling with the help of departmental D 4 tractors, which helped the allottees to take possession quickly.

The Quantum of Relocation

Name of Village	No. of families	Human Population	Cattle Population	Land involved (Hectare)
1. Dhara	85	930	1100	90.205
2. Jhirna	137	1250	1400	97.028
3. Kothirao	78	800	1000	29.487
Total	300	2980	3500	216.720 (+5.055 Patta land)

Land Allotted at New Place

Name of Forest Block	Area (in ha.)
Ampokhara Forest Block	98.344
Partap Pur Forest Block	16.590
Manpur-Firozpur Forest Block	106.700
	<u>221.634</u>

Relocation of Village Laldhang in Nainital District which was originally proposed with above villages got delayed at Govt. of India level and final clearance was received sometime in early 2000. Laldhang Village had following demogrphic figures:

Name of Village	Human Population	Cattle Population	Land involved (Hectare)
Laldhang	1100	1300	184.846

Due to an ongoing World Bank aided project the relocation could not be possible immediately and this lingered on for sometime. Finally, majority of the families did move to the new site in 2001 but about 18 families with land holding and about 12 families so called landless people have not moved out so far and the very purpose of relocation has been defeated both for the people and for the Giver moved out and there is all likelihood of these people inviting outsiders in the name of eco tourism.

Social and Economic condition of oustees at New Location

The social and economic status of the oustees has improved tremendously. They are now close to the developed township of Ramnagar and Kashipur and the fertility of land is several times better. Irrigation facilities have been developed and pucca houses have been constructed by majority of them. They no more keep unproductive cattle. They are on a State highway. Their products have ready market. Many have electricity and telephone facility. Schooling of children has become daily business and most of the people are now sending their children to schools and colleges. They have started keeping improved variety of cattle and practice modern agriculture. There is very little or no conflict with wild animals. A revolution has come in their economic and social condition within a very short span of time. Many of the absentee landlords of the original site has become active farmers.

Though the status of their land is no more that of a Reserve Forest but Hon'ble

Supreme Court of India has put certain conditions, such as, prohibition of transfer of land for the next 50 years except by way of succession and prohibition in change of land use pattern. This may be in the general interest of the people to prevent agricultural land being diverted for colonization, industries and hotel and resort business. These activities are likely to concern many people particularly those with smaller holdings into landless category and eventually make them destitute and slum dwellers.

The Resorted Habitat

About 273 ha. of land was restored back as prime tiger habitat in 3 separate patches. They are being managed as Chauras (grassland) for the prey species. These sites are now prime wildlife habitat with large herds of cheetal grazing on them. One can hear alarm calls of Chetal, Sambar and Peacock from Jhirna Forest Rest House. Each site has been taken over by the territorial male tigers under their control. Elephant roam around without causing conflicts with humans. Scores of Pea Pheasants keep searching for their food on these patches. The bird life, butterflies, dragon flies and scores of night dwellers now use this area without any disturbance.

The Lessons Learnt

1. Relocation of Villages has generally been regarded as social problem but in this case even the initial initiation was made by the villagers themselves and their elected representatives were always actively associated with the demand of villagers. The involvement of villagers and their elected representatives made the successful relocation possible.

(ii) The cause of relocation was beneficial both to the people and to the wildlife. In fact relocation was being advocated for the benefit of both of them right from the time of handing over of the forest to Forest Department. The idea of disturbance free habitat for wild animals was mooted as far back as 1861-62, when habitation from Dhikala and Boxar chauras were shifted. This helped in creating the first National Park in the Indian sub continent about 67 years back and maintain it in prime condition till now. The sacrifice of few people at that time has gone a long way in the conservation history of our country.

(iii) The villagers need constant guidance and right kind of intervention from Govt. agency in order to make successful relocation possible. Sorting out of internal differences among themselves and deciding about land allotment process among themselves also helps fair allotment and satisfaction among villagers.

(iv) Relocation process has to be flawless or the situation like that of Laldhang village will emerge whereby inspite of majority of villagers having been moved, the site still remains occupied by human beings.

(v) The oustees need lot of support and moral back up to establish at the new site. Follow up with district administration for their developmental needs is essential.

MY EXPERIENCES WITH TIGERS OF CORBETT

A.S. Negi, I.F.S.

Corbett Tiger Reserve, the Country of roar, trumpet and song is one of the most exciting place one can think of. I was greatly fascinated by the beauty and wilderness of the place even when I was a School student. I got several opportunities to visit the beautiful and thrilling jungles of Corbett National Park right since 1963. Since when my elder brother Mr. N.S. Negi, a popular and able Assistant Park Officer was posted there. His innng in the Park was one of the longest (almost 17 years). I had seen him stay inside the Park at Dhikala during closed rainy season even in those days. He was the first official to volunteer to stay inside the park at Dhikala during rainy season when it was completely cut off from rest of the world and supply of ration and other subsistence material was only possible from Ramnagar, a place 50 km away, on elephant back. Which took nearly two days. Even Dhikala became very inhospitable with tall grasses around living quarters and king Cobras, pythons and other poisonous snakes creeping everywhere. Material was a great menace and evacuation of sick to safer places was very difficult and time taking. Some Guards even committed suicide in such inhospitable conditions. Slowly some more staff volunteered to stay with him and since then it became a practice for the Park staff to stay inside during rainy season for patrolling the interior areas.

I had read books of Jim Corbett and even as a boy I was very eager to see the tiger, one of the most beautiful animals of Indian jungles. Wildlife protection and conservation was not a catch phrase in those days like it is today and the hunting blocks around Corbett National Park (CNP) used to be very popular as the spillover population of tigers and other animals used to be a easy catch for the hunting permit holders. All the silvicultural operations (mostly tree felling) were going on inside the Park and the only difference was presence of wildlife protection staff in addition to the regular territorial staff inside the Park. Tourism at the time was a limited activity confined to Dhikala and few other Forest Rest Houses. Greatest attraction was the Mahaseer fishing in Ramganga, which attracted large number of people from India and abroad. Only wildlife lovers and few elites were attracted by the Park. Tiger sighting used to be a fun as baiting was a regular practice. Even a token fee was realized from tourists after sighting of the tiger. Buffalo calf was used as a balt which was tied at appropriate sites around Dhikala in the evening. There used to be one or more Machans (Watch towers) at each of these sites and tourists were taken to these machans on department elephants after the killing of the bait was confirmed by the patrolling staff in early hours of the morning. These very elephants were then used for 'Hanka' (driving away the tiger) in the tall grasses and visitors sitting on the machans could get a glimpse of the tiger while being driven away from the tall grasses. Sometimes two or more adult tigers or tigress with cubs would gather at the kill. In one such operation I had once seen 5 tigers from the machan one after another. The was my first experience of sighting of the tigers in Corbett or anywhere in the wild. Wild elephants in those days were seen very rarely around Dhilala and I used to walk to the nearby watch towers in Dhikala chaur (grassland) from the Dhikala complex and sit on

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them for very long hours watching herds of spotted deer, hog deer and wild boars. Tiger sighting from these Machans was not easy in those days as great disturbance was caused by movement of Timber trucks. My brother (Mr. N.S. Negi) was a keen angler and I also got interested in this activity. I used to scan Ramganga river (there was no reservoir at that time) for angling and it was normal to move in the thick islands of Ramganga even in late hours. These islands locally as majharas are also very good habitat for Tiger but I never came across a tiger while walking along these majharas.

My visits to Corbett became less frequent after I joined service in Forest department. Many change took place during this period. CNP became a Tiger Reserve in 1973. In fact the prestigious Tiger Project was launched in CNP itself. Ramganga dam had been built at Kalagarh submerging about 40 sq. km area of prime grassland habitat of the Park. The landscape of Ramganga river from Kalagarh to Dhikala changed completely. All Majharas in this stretch got submerged. Hog deer population decreased drastically. Migration routes of wild elephants were disturbed. Cheetal herds were fragmented. All logging operations in the park had been stopped. Park area had been increased by about 200 sq. km to include some of the shooting blocks of surrounding areas. Shooting had been banned in the entire state of U.P. Corbett National Park was now being managed under Project Tiger and dual control had been withdrawn. Baiting of tigers had been discontinued and fishing in Ramganga had also been banned. Elephant population within Park area during summer months had increased substantially, An area of about 300 sq. km to the west of the Park had been declared as Sona Nadi Sanctuary but its control was still with territorial Kalagarh Forest Division.

I took over as Field Director of Corbett Tiger Reserve in early November 1989. By then the general climate was in favour of tiger conservation at least in the Corbett Tiger Reserve (CTR). The count of tiger in CTR had increased from 45 when project tiger was lanchd to about 90 when I took over (in about 15 years). During this period of 15 years two of the male tigers 'Dhitu' and 'Sheru' assumed international fame for their notoriety as man-eaters. These excellent mighty males attacked and killed staff members and one ornithologist (Mr. David Hunt) and had to be captured and shifted to zoos. Another sick female tigress 'Lame-Dame' mauled two fodder cutters of the park and one female foreign tourist sleeping in a tent. The tigress had to be killed. Some of the tigers on the periphery of the Park also turned. Man-eaters and created conflicting situation with local people. These man-eaters had to be killed or captured. Jim Corbett, the famous hunter ad conservationist who killed several man eating tigers and leopards of Kumaon and Garhwal had said that "a man eating tiger is a tiger that has been compelled through stress of circumstances beyond its control, to adopt a diet alien to it. The stress of circumstances is, in nine cases out of ten, wounds, and in teeth case old age. In case of 'Dhitu' and 'Sheru' the above was not true. They turned bold due to over exposure to human beings and lost fear of man which is otherwise inherent in them.

After taking over at Corbett, my dream of observing tigers in their natural habitat came true and whenever I found time I would go on elephant back or drive around Dhikala or sit on Machans (permanent or makeshift) for long observation of this great and magnificent Cat of Indian Jungles. I also kept a log of tiger viewing and kept on recording my observations. Some of the interesting observations recorded by me are

being given below:

11th December, 1989:

This was my first tiger sighting since I took over on 2nd November 1989. Heard tiger call at Lidkhalia the far end of 'Thandi Sadak' in Dhikala chaur at 12.10 p.m. Switched off the vehicle and waited on road. The call was coming nearer. There was great excitement. The tigress emerged from tall grass but immediately retreated. Went back to Cart Road and saw two figures at the far end towards the lake. Viewing through binoculars, it became clear that it was mating pair approaching towards us. The tigress had found her mate. They walked together towards us till they were visible by naked eye but soon noticed our vehicle and disappeared in tall grass. During this short period I did not see them mating.

10th March, 1990 :

While driving by Gypsy with Mr. G. Ganesh, Secretary, Forest Department, U.P. Govt. heard langur calling near Ram Singh road at 7.30 am. Tiger was in the nala, a big male, probably, 'Taimur'. He immediately retreated to thick bushes grassland nala and was again sighted at the edge of grassland, staring at us from behind the tall grasses. Vanished in thick bushes immediately.

After we had returned to Khinenuall Forest Rest House some tourists informed that a tiger is lying on Sambar road. Without losing time we turned our Gypsy towards Sambar road. While driving slowly near Aonlasoti at about 8.30 a.m. a big male tiger leaped from left side of the road to the right, I halted the vehicle just at that spot to find that the tiger had turned back and was looking at us from a close range. Everybody on the Gypsy could see him in full view for nearly 2-3 minutes. We turned back and saw him again in the nala below while driving back to Khinenauli. Everyone was curious to see this beautiful big male again so we turned our vehicle and as we were going the same tiger came on the road from the nala and was right in front. He turned towards us and sprayed on bushes on the up hill side, walked few yards along road and again jumped into the nala and vanished.

23rd March, 1990

As soon as I arrived at Khinenauli FRH in the evening with Forest Minister of U.P., I was informed that a big sambar stag was lying dead in Ramganga in midstream at Gathiarao. I immediately went to inspect. I was told that at 4.00 p.m. same day a tourist, while returning from Kanda road saw a big sambar stag being followed by a small tigress from across the Ramganga towards Gathiarao wooden bridge. As the tourist stopped his vehicle to see this rare sight he saw the tigress overpowering and almost riding the stag near the bank of the river. The sambar was running for his life, the tigress reached the neck from above his back and by the time the stag lost his courage he was in the midstream of Ramganga. Tigress left him dead in deep bouldary bed of Ramganga and vanished in the jungle on this hillside. The tigress was fully aware of the presence of the tourist vehicle as after killing the sambar she did try to drag her prize and instead vanished in the nearby hillock to rest and watch her kill from there. The water was deep and stream was fast so we thought it might be difficult for the young tigress to retrieve the kill. So it was physically dragged out of water and kept at the bank on Khinanauli side. When we came next morning at 6.30 a.m. we found the tigress lying in lantana bushes by

the side of road. She had eaten her full diet in the night and was guarding the kill. The tigress was really very young and small sized. She managed to drag the kill to the bushes about 100 metres away from where we had left it and eaten about 20 to 25 kg in one go. The kill had been carefully covered with grasses. The tigress immediately vanished into thick lantana bushes and we did not disturb her further.

29th April, 1990:

In the evening patrolling on elephant went to fulai and the Mahawat Istiyaq tried to track the tiger in the 'Chaur' and in the streams but all other animals could be seen except the tiger. We went upto the far end of the chaur. That is Ringtone. I told the Mahawat to return but he insted to go upto the perennial nala near Ringora. As we were approaching the nala at 6.30 p.m. a tigress jumped out of the deep went behind the ridge above. Immediately after came one grown-up and then another from the same spot and both went up to the top of a small covered hillock. The cubs were more than a year old. One male and one female. We took the elephant up on the hillock and found a Chital kill lying in bushes. The family after eating major portion was drinking in the nala. We went round the hillock when the male cub who was hiding in bushes growled and ran to the far away jamun forest through open land in our full view. The tigress and female cub had eluded us and vanished in thick bushes on the higher hill.

10th June, 1990:

Had gone to the Park on routine round starting from Ramnagar by gypsy at 10.00 a.m. Took evening elephant ride from. Dhikala and saw a male tiger at Ringora which immediately vanished in the bushes. While coming back to Dhikala by gypsy saw a glimpse of a tiger lying in water in nala below Sambar road at 7.00 p.m. The tiger had heard the sound of the vehicle and ran away in bushes after seeing the vehicle. While returning to Ramnagar saw a big male tiger in Dhangarhi nala about 3 km inside the main entrance gate. He stood on the other side of the nala in full view at a close distance and remained there looking at us for nearly 3 minutes and then retreated to the steep hill above.

24th December, 1990:

Frequent tiger sighting was being reported in the grassland around Dhikala. A pair of mating tigers and one tigerss with grown-up cub were being sighted by tourists on their routine morning and evening elephants rides. I took 'Rambha' for evening elephants rides. I took 'Rambha' for evening patrolling with Mathawat Istiaq giving his account of tiger sightings of previous one week. He was taking the elephant to prospective places in the tall grasses when we heard a loud elephant trumpeting near Machan No.1. Istiyag immediately turned his elephant and made him run in the direction. At 4.00 p.m. we were near the tigress who had been sighted by another tourist elephant. The tigress was furious, mock charging the approaching elephant. By then two more tourist elephants who had heard the roaring and trumpeting had also reached the spot and all the tourists on 4 elephants saw the tigress in full view and many photographed her. As more elephants had reached the tigress thinking that she had been surrounded. Quickly withdrew in thick and tall grasses.

12th January 1991 :

I was on a morning round on the elephant and after crossing the grassland we

turned towards the water hole near Machan No.3. We had hardly gone about 100 metres when we saw large male tiger lying quietly at an open space between lantana bushes at 8.00 a.m. Our elephant stood at a distance of less than 15 metres but the tiger did not bother. I took photographs and moved the elephant a little ahead when the tiger got up and went towards 'Thandi Sadak'. We saw him crossing the road and disappearing in tall grasses across.

13th February 1991:

While I was on the morning round on the elephant with Dy. Director, Project Tiger, Govt. of India, we approached thick lantana bushes between machan No. 1 & 3 tracking the pug marks of a tigress. Mahawat Istiaq pointed towards a lantana bush and whispered 'tiger' Only trained eyes of an experienced Mahawat could have spotted tiger in a thick lantana bush when only her ear with white spot was visible to us. The tigress slowly turned without moving a twig or branch and vanished in few seconds. The way she made use of her elastic body to turn around and move without moving the bushes was amazing.

After returning to Dhikala I was looking towards Ramganga river from the back of Field Director's cabin with binoculars when I was surprised to notice a tiger crossing Ramganga at a wide pool on the far side. Many of us saw him cross the river, look towards us, Larch and finally disappear in the bushes.

13th March, 1991:

Mr. Geetha Krishanan, then Secretary, Expenditure, Govt. of India who is a keen wildlifer and good bird watcher was on a visit to Corbett park. I accompanied him in the morning elephant ride from Khinanauli at 5.30 am. We crossed Ramganga near a temporary wooden bridge on Taulia road and as we had crossed the river we came across fresh pug marks of a male tiger. Hippy' the territorial male of the area had returned after his morning round of Khinanauli chaur where large number of chitals congregate at night near the FRH and elephant shed. We followed the marks upto Boxgaddi when we heard an alarm call of barking deer near Taulia Forest Guard Chowki. We followed the call but it was a false alarm call which is generally given by barking deer. We turned back and followed the pug marks on a small track along foot-hill towards Boxgaddi. We were about to reach the junction of Boxgaddi and Kishangaddi when we heard the alarm call of langur which is sure indication of tiger's presence. We had hardly gone few yards when we saw a large male tiger sitting under a tree looking at the nervous langur on a sissoo tree. Tiger sensing our presence immediately moved in grasses on the left bank of Boxgaddi. When we approached him, he was lying in the grass and looking at us. We reached almost within 15 metres of the tiger. True to our guess, it was 'Hippi' the territorial male tiger of this area whom we had named so due to large tuft of hair on his cheeks. He felt disturbed by camera clicks and moved downwards quickly taking the beaten animal track along the foot-hill. We heard a chital call up in the nala and thought that there could be a female and followed the nala sometime without seeing anything and turned back to follow the male. At a little distance we saw a small herd of chitals who were highly alarmed as their ears were turning round and they were looking in a particular direction. Suprisingly they did not call. Perhaps they had scented the tiger. We followed the direction in which the chital were looking. Only after few minutes we

spotted the tiger walking briskly in front of us. Within 5 minutes he was seen lying under a lantana bush. With his head resting on his crossed forelegs and eyes being alternately closed and opened. We watched him from a respectable distance, photographed and left him lying there. It was a unique experience for Mr. Geetha Krishnan who said he had seen a tiger being tracked through his pug marks successfully for the first time.

Same evening I took Mr. Geetha Krishnan to Paterpani side. While returning we heard chital alarm calls at the bifurcation of Gaujpani road at about 5.00 pm. A group of chitals was standing on a hill projection and continuously stamping their front foot and calling. They were all looking up in a particular direction. There was certainly a tiger sitting somewhere up under a tree which the chitals had seen but he did not move because he had seen our vehicle. We waited for 15 minutes but the tiger did not move out.

8th April, 1991 :

Resident males generally expertise in hunting certain species of prey animals in certain area during a particular season and same tiger can be seen again and again. This season 'Hippi' had expertise in hunting sambar in the area of Boxgaddi and Kishangaddi. I was informed about a sambar kill in that area by the patrolling staff. I set out on elephant Rambha with Istiaq Mahawat from Khinanauli and Roopkali of Nisar was also taken along as he had seen the kill on previous evening. As we approached the kill at 6.30 a.m. 'Hippi' mock charged Roopkali. He had over eaten from his prized kill, a over 100 Kg. sambar stag and was feeling uneasy. We withdraw leaving him near the kill. I again went on elephant to observe him in the evening and found him still at the kill. He immediately climbed up the hillside and lay on higher ground behind trees. His tongue out and gasping loudly in the bright afternoon sun. After watching briefly and taking photographs we withdraw. As we were coming back and photographing a king vulture who was waiting on a tree branch for the tiger to leave the kill, we saw that the tiger went higher up on the hill and was making sure that we had really withdrawn. We also saw a king cobra swimming through a small pool of water.

30th April, 1991:

I was patrolling the Fulai area in the evening by elephant. I reached Ringora at 7.00 p.m. when I heard sambar call on the hill. I asked the mahawat to hurriedly climb on the small hill as the tiger was expected to be on the other side in the nala. We saw four sambars standing at a close distance from us and looking down in the nala. Their tails were erect and they were stamping their front foot and giving loud alarm calls. As our elephant reached the saddle we found that a male tiger was drinkling in the nala and sambars standing just 25 metres up were constantly looking at the tiger and giving alarm calls. They were perhaps waiting to judge the tiger's mood after he finished drinking water. As the sambars saw us, they fled towards the hillside and tiger also withdraw slowly. We could see him looking at us and walking up on the grassy slope.

9th May, 1991:

I decided to take an evening round of Dhikala chaur by gypsy to watch the elephant herd at the Lidkhalia end. I reached the Motasal' crossing on 'Thandi Sadak' when I saw a young male tiger strolling on the grass at 6.00 p.m. hardly 50 meters from us. I observed an elephant herd grazing in the chaur with two or three tuskers trying to mix with females. The tiger first followed a hog deer unsuccessfully and then walked

fearlessly towards the elephant herd. A tusker standing about 50 metre away from the main herd smelled the tiger and ran towards the herd and joined it within minutes. The tiger was lost in the tall grasses, with mother elephants warming their young ones through typical sound about the presence of tiger in the vicinity.

18th May, 1991:

I was patrolling the area between Khinanauli chaur and Ramganga by elephants when at 7.30 a.m. I heard a shriek voice from a thick lantana bush on the Ramganga side of the 'Sher Batia'. This type of sound had neither been heard by me before nor by the Mahawat who had been in the park for more than 25 years. It was a loud and repeated shrilling cry. On investigation of the bush, to our surprise we saw a tiger cub struggling in the bushes and trying to come out. Poor cub took the sound of the walking elephant for his approaching mother and started crying. We did not get down to examine the cub as there was danger of the tigress being in the vicinity. The cub continuously cried and tumbled on the undulating ground searching for his mother. I thought the tigress must have gone for a hunt and will return to the cub after sometime. I took my camera and sat on a nearby sisham tree from where the view of the cub was clear and I tried to completely camouflage myself on the sisham branches. For three hours I waited but the tigress did not turn up. After the elephant had gone the cry of the cub became feeble slowly and he lay down in the bushes. Whenever there was a slightest movement of the bushes by an approaching monitor lizard or even by the blowing wind it started crying again to give signal to her mother who never turned up. I withdrew to Khinanauli and consulted the experienced Mahawats and staff members as to why the mother had not turned up for such a long time. The cub looked very weak. I went back to the spot on elephant at 6.00 p.m. to see whether the mother had taken the cub or fed him but the cub was lying there with very little strength left to cry loudly. It was now confirmed that it was a case of abandoned cub. We took all precautions and examined the cub closely. It was a female, very weak and just a skeleton. The size was that of a domestic cat and eyes were open. All this indicated that she was about 20 to 25 days old and had not been fed by her mother for the past more than 24 hours. We decided to bring her with us for a possible treatment. She was immediately named 'Khinni' having been found near Khinanauli. She had been without any liquid for all the 12 hot hours of May and must have been so since the previous night. We gave her boiled water with little milk to reduce the dehydration. She sucked the milk through a baby bottle which was available with one of the staff members. She was immediately brought to Ramnagar and given boiled water and little cow milk before being taken to an old and experienced veterinarian who had treated a tiger cub a previous occasion. He started her treatment with life saving drugs and was hopeful of saving her. The veterinary doctor found the weight of the cub just 350 gms. and length 58 centimetres. Unfortunately the cub died at 1.15 a.m. on 20.5.92 despite the best efforts of Dr. Sarkar to save her. Everybody who had heard or seen her felt very bad about it. Dr. Sarkar suspected some intestinal disease which could be infectious and harmful to other cubs. The tigress must have moved the healthy cubs to other location abandoning the sick one. It looks cruel but these are the wild ways.

24th & 25th May, 1991:

On an information about a kill in Nibu Bojhi below Sambar road I set out on

elephant to inspect it. It was a Chital kill made on previous day and had been finished except for the hind legs few bones which were hidden in thick lantana bushes. I sat on a sisham tree with my camera for 4 hours from 9.30 a.m. to 1.30 p.m. but the tiger did not return to the kill. I withdrew and while going back to Dhikala I checked the water hole on Sambar road near Khinanauli. I saw a tigress lying in the muddy water away from the main waterhole at 2.00 p.m. She immediately went into the bushes but I saw a grown-up cub running stealthily through the thick bushes. Tigress remained sitting in the bushes and I withdrew and came back to Dhikala. In the evening I again went to the water hole on elephant and found the tigress and two of her cubs one male and other female in the grasses. The cubs immediately vanished but the tigress mock charged and the elephant started trumpeting and raising his trunk. All three were seen running about in the grasses. I decided to sit on a Jamun tree near the water hole to see if they returned again and sent the elephants to Khinanauli with instructions to get back after an hour. Within 15 minutes the tigress came from above the road followed by one of her cubs probably male and went to the tall grasses. I heard bones cracking, a kill being devoured in the tall grasses. Second cub also joined from different direction. On return of the elephant I went to find all three eating a sambar kill. A half eaten wild boar was also lying nearby. Tigers generally become bold after sunset so they did not bother for our presence and we withdrew. Next morning I inspected the kills. Which had almost been finished. I sat on the Jamun tree to observe the tigress with her cubs. I settled on the tree at 11.00 a.m. and at 12.45 p.m. the tigress approached from above the road and sat in the waterhole but got immediately alarmed by the click of camera and suspecting something on the road she came down to the muddy spot where she was lying the previous day. This was visible from the tree I was sitting on. She calmly lay herself in the muddy pool watching the road. She did not suspect my presence as she was more careful about the road just above. She was facing me. At another click of the camera she looked up towards me from a distance of about 15 metres and could see my head projecting out in an effort to take a better pose of the lady in water. She immediately changed her mood, growled at me and jumped in the opposite direction and was lost in thick bushes. She had perhaps commanded her cubs to stay back in the nearby jungle due to the disturbance experienced on the previous day. I could not photograph the cubs and mother together but I was more than satisfied to observe the sudden change in the mood of the tigress from a calm and peaceful face to a highly aggressive one. These wild creatures certainly don't like to be disturbed in their natural habitat.

27th November, 1991:

One week capsule course in Wildlife Management for All India Service Officers was in progress at Dhikala. After the evening lectures some senior officers requested me to take them round the grassland for wildlife viewing. There was still light so I took three officers in an open gypsy via 'Thandi Sadak'. The gypsy was very slow. Around 5.45 p.m. when we were approaching the point from where a foot track goes to Machan No. 3 and were about 10 metres from there a large tigress emerged from the bushes roaring and followed the gypsy for nearly 10 metres. Everybody got scared. Immediately after the tigress had retreated a tiger emerged from the bushes and roaring loudly mock charged the gypsy and almost reached at a touching distance and followed us for about 10 metres.

That made the officers almost nervous specially a lady from Punjab. This was a mating pair being sighted in the area since last 2 weeks. It was for the first time that I saw tigers mock charging a vehicle. The reason was obvious, Their courtship had been disturbed and the time was also slightly late when the tigers get unusually bold.

22nd January, 1992 :

In the morning patrolling on elephant I came across pug marks of a male tiger below Sambar road on the bank of Ramganga which led us to thick and tall grasses. Tiger must have run away due to our presence in the area but we saw a fresh sambar kill half eaten lying in the grass. I decided to sit on a Shisham tree standing near the kill to watch the tiger. After being disturbed on the kill in the morning hours the tigers generally do not return to the kill till late afternoon but keep guarding their presence in the nearby area. I sat on the tree at 3.00 p.m. and covered myself well with twigs and branches. While I was patiently sitting I noticed a big male tiger approaching from northern side at 3.45 p.m. I held my breath so that the tiger did not suspect my presence on the tree. The tiger looked up on the tree and suspected human presence. He advanced slowly but continuously keeping his eyes fixed on this tree. I could see how cautiously tigers approach their kill. He came under the tree looked up, growled and turned back and lay in the grasses facing me. He remained there for about 10 minutes and reluctantly retreated in the direction from where he had come. I remained on the tree with the hope that the tiger would return to the kill after sunset. My guess came true when at 5.30 p.m. I heard the growling of the tiger in the western corner. The tiger was approaching. He had taken a thickly covered route. He lay in the grass for sometime and was perhaps waiting for the darkness to come but I climbed the tree to see where exactly the tiger was hiding. The tiger looked at the direction of the kill. When the tiger approached the kill he looked at me. Growled loudly, picked up the kill and jumped in tall grasses with the half eaten sambar kill in his mouth. It was a great experience.

28th March, 1992 :

During the visit to the park, of the Hon'ble President of India, Sri R. Venkataraman a sambar kill had been located by the field staff in the thick grasses between two streams of Ramganga near Gethia Rao. I took the Hon'ble President to the spot at 6.00 p.m. on elephant back. President's elephants was followed by 4 other elephants on which other staff of the VVIP entourage and trackers and guides of the Park were seated. We placed the President's elephant at a convenient position and asked other elephants to come from the opposite side so that the tiger could be sighted by the VVIP while crossing wide open space of dry stream. Unfortunately the tiger went in opposite direction which was indicated by a alarm call of a sambar and later by continuous alarm calls of langurs. The tiger was seen by the Park staff only.

Next morning it was drizzling and departure of VVIP from Khinanauli FRH was delayed. When the drizzling stopped at around 7.15a.m. VVIP was taken to the same spot. The fresh pug marks had confirmed the presence of two tigers in the grasses. The performance of previous evening was repeated. Some members of VVIP party could see the tigers in the thick grasses but neither of the tiger would come out of the grasses and we had to move the President's elephant a little inside so that it was possible for him to see the tiger. A tiger came out from thick grasses and could be seen for a moment by all other

members on the President's elephant except by the VVIP himself. The tiger disappeared in the thick grasses. Seeing a tiger is always a chance even if it is very near. The whole effort was to show the tiger to the Hon'ble President but alas, except him everybody on all elephants including other members or his party saw the tiger.

10th & 11th May, 1992 :

I had gone to the far end of fulai chaur known as Ringora on the morning petrolling by elephant. While I was returning, a loud human voice was heard near fulai watch tower. We rushed towards it and found another elephant with tourists standing at the edge of the jungle. The Mahawat of this reported that a tiger had killed a chital doe in their presence a short while ago when he had made the noise to convey it to me. He pointed out towards a bush where the tiger was eating the kill. The tourists on his elephants looked excited and confirmed the killing in their presence. I could make out that the tiger was waiting in ambush for the Chital herd which retreats to the jungle after night long vigil on open grassland below. As the herd started climbing the slope the tiger successfully caught his prey and took him to a lantana bush nearby and started eating it while the tourist elephant was still there. Perhaps the tiger was too hungry. When we approached the bush the tiger walked away. It was a big male tiger who was being sighted quite frequently in Fulai area and had been recently named as 'Bholu' due to his innocent behaviour. He had only a small hind portion of the prey. The kill was clearly visible from a Jamun tree standing nearby, so I decided to sit on the jamun tree to wait for the tiger to return. The elephant was sent back. I sat on the tree at 9.00 a.m. After waiting for long hours, he finally returned at 4.00 p.m. He came from behind the Jamun tree and as soon as he came under the tree he suspected something on the tree and started looking up but could not see me to good camouflaging. Had the tiger continued to advance towards the kill, his back would have been towards me and he would have not been able to keep an eye on the tree, so he retreated back. Took a long detour and advanced with his face towards the tree. I was astonished to note this intelligent behaviour of the tiger. He slowly and carefully advanced towards the kill, all the time keepings his eyes fixed on the tree and swiftly lifted the kill and went in a thick lantana bush nearby. He could not push through the bush with the kill in his mouth so he left the kill at the edge of the bush, went round the bush to other side, entered the hollow of the bush and dragged the kill from there and started eating it. Due to thick bushes, it was not possible to get good photographs but I was thrilled to study the behaviour and was rewarded for long wait on the tree. It was also noted that tigers when disturbed on kills in the morning only return to it late in the afternoon however hungry they might be.

Next morning I wanted to check whether the entire kill had been consumed and whether the tiger was still around. I set out Dhikala by elephant early in the morning and reached near Fulai watch tower at about 7.00 a.m. As our elephant was negotiating the escarpment between the low grassland which remains submerged in lake water during rainy season and the jamun forest above it. I saw a tiger lying at the edge of the escarpment and looking with an angry face in the nala below, which was not visible to us. As our elephant went a few steps up. The tiger got up and quietly walked in the jungle. Now the nala where the tiger was looking was visible. We were surprised to see a big tuskar standing there and tossing his head in anger looking up in the direction of the tiger.

The steep ground separating the tuskar and the tiger was hardly 10 metre high. Strangely the tuskar did not give any alarm call to the herd of elephants which was in this area, though not very near. Presumably, the tuskar saw the tiger all of a sudden when he was coming towards him and did not retreat as the tiger was on higher ground and very near. Our presence disturbed their natural interaction and they went their respective ways. Such interaction in the wild is only a rare sight. We went in the direction of the kill and sighted the tiger again walking on the road in front for nearly 20 yards when he suddenly disappeared in thick bushes.

Earth Now Home To 3 Trillion Trees

Washington: More than 3 trillion trees exist on Earth roughly 422 per person –but the total number has plummeted by 46% since the start of human civilization, according to a new Yale –led study.

The new estimate is about seven and a half time more than some previous estimates of 400 billion. The researchers came to the conclusion after mapping tree populations worldwide at the square-kilo metre level using a combination of satellite, and super-computer technologies.

“Trees are among the most critical organisms on Earth, yet we are only recently beginning to comprehend their global extent and distribution,” said Thomas Crowther, a postdoctoral fellow and lead author of the study.

Crowther and his team collected tree density information from more than 4,00,000 forest plots around the world, including from several national forest inventories and ground level studies .

The highest density of trees were found in the boreal forest in the sub-arctic regions of Russia, Scandinavia, and North America. But the largest forest areas, by far, are in the tropics, home to about 43% of the world's trees.

Researchers found that climate can help predict tree density in most biomes.

Times of India :05:09:2015
Courtesy_-N.C.Madhwal

MAN-EATING LEOPARDS OF GARHWAL

A.S. Negi, IFS

The man-eating leopard of Rudraprayag killed by famous hunter and conservationist Jim Corbett in the year 1926 created a history by operating in Garhwal for nearly eight long years and killing over 125 human beings and injuring many more. Jim Corbett has given an interesting account of the kills made by this cunning carnivore in his famous book "Man-eating Leopard of Rudraprayag". Many a hunters of name and fame tried their marksmanship and used their hunting skills to eliminate this notorious carnivore but had to return disappointed. It was Jim Corbett, the hunter of several man-eating tigers, who ultimately added one more man-eating carnivore to his inventory of hunts of such animals. Those were the days of British Raj and in spite of such large number of humans having been killed by a single leopard not much of hue and cry was made and the simple people of these remote hills took it as their destiny. Today even lifting of few cattle or killing of one or two village dogs invites attention of media. The intolerance towards wild animals is increasing. In the good old days people would compromise with disadvantages of being near a forested area with many a day to day benefits that derive from them. Today, every bit of advantages would be used freely and without any obligation but when it comes to little discomfortable on account of being near a forest area, people would not listen to even most valid arguments in favour of totally defenceless wild creatures.

Jim Corbett in his book "Man-eaters of Kumaon" has written "A man-eating tiger is a tiger that has been compelled through stress of circumstances beyond its control, to adopt a diet alien to it. The stress of circumstances is in nine cases out of ten, wounds and in the tenth case old age." This statement is true for leopards also. Today, the greed of the poachers and illegal traders of wild animals and their body parts is responsible for more number of injured leopards in remote areas of hills where presence of wildlife protection staff is just token and the terrain is very difficult. The people trying their hands at illegal hunting are totally inexperienced and are perhaps injuring more leopards than killing them. Their analysis of figures recorded in the office of the Division Forest Officer, Garhwal Division will further testify this contention.

1.	Total number of leopards recorded as killed/charged during 1986 to June 1996	-	51
2.	Leopards recorded killed by permitted hunters after being declared as man-eaters	-	11
3.	Leopards reported killed by irrate villagers	-	11
4.	Leopards found dead (reasons not known)	-	12
5.	Leopards killed by suspected poachers	-	11
6.	Deaths reported by natural causes	-	4
7.	Reported killed in an encounter with a daring man	-	1
8.	Caged by forest department being man-eater	-	1
	Total	-	51

It is recorded in the same office that during a period of about 10 years (1986 to June 1996), 61 human beings were killed by different man-eating leopards in the Garhwal

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district in different places and 76 human beings were injured in the same period. During the above period number of leopards killed or caged was recorded as 51 which is close to the number of human beings killed. The figures recorded in the office of the Divisional Forest Officer, Garhwal are as under.

Year	No. of humans killed/injured by man-eating leopards		No. of leopards killed	Remarks
	Killed	Injured		
1986	-	-	1	Information
1987	-	-	1	regarding
1988	4	-	1	human kills
1989	3	-	6	in 1986 & 87
1990	15	5	8	and those
1991	12	9	5	injured
1992	-	-	3	during 1986
1993	5	18	5	to 1989
1994	7	16	1	was not recorded
1995	13	21	13 (+1 caged)	
1996	2	7	6	
(upto June)				
Total	61	76	50 (+1 caged)	

Prior to 1988 the incidents of man-eating by leopards in Garhwal were few and occasional but after that the above figures can certainly cause worries as there has been an increasing trend and regularly of the incidents. The incidents are typically of those areas where the leopard prey has been eliminated. The villages around Corbett Tiger Reserve or dense forests of Dudhatoli, where is abundance of prey animals, are free from man-eating incidents.

One of the mean-eating leopards operating around Khankara, between Srinagar and Rudraprayag, during 1990 and 1991 killed and injured over 20 people. I was associated with elimination of this animal as Field Director of Corbett Tiger Reserve. The first and last victims of this beast were two young sons of an unfortunate father in a small hamlet near Khankara. This leopard was tracked by Sri Thakur Dutt Joshi, Assistant Wildlife Warden of the Park (now retired), an experienced marksman, who killed it after great efforts, Sri Joshi was always pressed into service for any incident of man-eating by tigers or leopards in Kumaon or Garwal. He was responsible for eliminating many a man-eating tigers and leopards. He would never kill or injure an animal without making sure about its identity as a man-eater, He was also rewarded and honoured for his good job and is known as Junior Jim Corbett in that area.

The increasing man-eating incidents by leopards in the hills or Uttar Pradesh are indications of the neglect of wildlife management in the hills and it is high time that the people understand the critical balance of prey-predator ratio and help restore it for their own survival.

THE INSTITUTION OF MAHAUTS

A.S. Negi : IFS

Mahaut is an Urdu word used to denote the person who has abilities and experience of driving a domestic elephant. Elephant is the largest mammal on land and has unusual size, weight and strength. Being intelligent and social in nature it has been possible to tame the animal but handling it and taking work from him is possible only with the help of a trained and experienced person. Domestication of elephants and their use for purposes like army, carrying men and material, adoring processions of Hindu Gods, a status symbol of kings, landlords and Mahants and above all for Shikar (hunting) has been an age old practice. Some Indian kings had armies of elephants numbering few lakhs. The kind of extensive and multipurpose use of domestic elephants was only possible with the help of Mahauts.

There is no record of formal training of Mahauts even where their number was very large like that in Armies of great rulers of ancient age. Mahauts have always been institutions in themselves and they continued the important profession through family tradition and it has remained an ancestral vocation being practiced generation after generation till present day. This was largely a profession of Muslims and remains so even today though on a much smaller scale.

After the ancient armies of rulers, it has been the Forest Department in different Asian countries which has been traditionally using elephants in large numbers initially for salvaging timber and hunting purposes, but of late for tourism in forest areas and to a limited extent for inspections of remote areas in plains. There is no record of any formal training or direct recruitment of Mahauts even in the forest department. It remained as a family profession passing from one generation to the other. Till the time when elephants were extensively used for salvaging timber. There used to be large number of elephants with forest department in South India and Assam. Breeding of elephants being a slow process their numbers were sustained by catching wild elephants through operations like 'Kheda'. These operations were conducted on a regular basis with the help of domestic elephants and Mahauts with skills in catching and training wild elephants, a tradition that was highly valued and witnessed by large number of urban people and foreigners with special interest.

The requirement of elephant for food and water is large and they could be tamed only by rulers, forest department and Jamidars with large land holdings. In many parts Hindu temples also had domestic elephants. After the disappearance of ruling class and abolition of Zamindari, the number of domestic or tame elephants went down drastically and Mahauts had to take up alternate vocations for subsistence. Next came the ban on hunting and reduction in timber harvesting. Most forest areas also became accessible by road. This further reduced the number of domestic elephants and the institution of Mahauts kept on shrinking.

There was isolated effort in Assam where one Mr. Baruwa an able professional elephant catcher had a large camp of domestic elephants with Mahauts skilled in catching wild elephants and they together with the specially trained elephants were

known as "Fandis". One of the daughter of Mr. Baruwa, Ms. Parbati Baruwa took keen interest in the profession of her father and has kept the tradition alive till date though now no elephant catching operation can be continued which has been banned under Wildlife Protection Act.

Ms. Parbati Baruwa, a smart lean and thin woman of short height not weighing more than 40 kg earned appreciation for her skills in India and abroad and now even at her advance age, she can handle elephants with great skill. The forest department specially in Uttarakhand and few other states took her help in training their Mahauts in short course of a week or ten days duration which she conducted with great ability.

The Mahauts of old days had thorough knowledge of elephants. They used to identify the nature, quality and health conditions of domestic elephants. Elephants are very much like humans. Even their anatomy, resembles with us. The placement of their mammary glands between forelegs, location of their sexual organs, shape and size of their eyes, intelligence at birth, social behaviour, sexual maturity of males and females, digestive system etc. have great resemblance with humans. This could be the reason why Hindus worship 'Ganesh' a depiction of half elephant and half human. Elephants are sensitive as far as their health condition goes. The Mahaut has to watch the elephant every day and every moment. He knows that the nails have to be wet, skin smooth and oily, ears flapping. He knows when and why elephants eat soil. What to do after they have eaten soil. During bath they examine their body, pads of all four feet etc. minutely.

Mahaut is the only one who can immediately tell about the general health condition of his elephant. He takes care of his diet. The most important thing is, Mahaut knows how to treat the ailments with 'Nuksas' (tit bits) known only to him. They are very secretive and do not reveal those 'Nuksas' to anyone except their own progeny. This is how the knowledge and training used to pass on from generation to generation. The elephants live close to them and the whole family watches the elephant and elephant also recognizes that this is the family of his master. The children of Mahauts, generally in good numbers start approaching elephants from very early age and grown up children will help their father feeding, chaining, bathing, cleaning, grazing and even mounting of 'Hauda' etc. During the process father will keep training them and they become perfect Mahauts by the time they grow. This is how the institution of Mahauts went on and on generation after generation without any formal training whatsoever.

The life of Mahauts has always been very hard and their plight always pitiable. They have never been paid enough to support their large families and their engagement is such that they can't do any other side job. The schedule is so busy that it is not possible for them to look after their children and family. They are so located with their families that it is not possible for them to educate their children. Even in forest department though they are Government Servants but the nature of their duty is so typical that it is not possible for them to look after their families. They are hard pressed for any leisure activity as they are always worried about their animals and can't leave it to anyone else, not even to 'Characut' (Fodder man) who is not directly responsible to the animal.

All these difficulties have led to dissipation of their profession by the younger generation. Now, they no more keep their families in the forest or close to where an elephant can be tamed. With reach of electronic media they have also learnt to lead a

more comfortable life. Living in towns has brought education to them and after even a token education and living away from elephant they will naturally not like to follow the hard ancestral profession.

The present day Mahauts are not serious about their job. They have not inherited the knowledge from their ancestors and know little about the natural treatment of elephants resulting in their untimely mortality. The veterinary doctors have little knowledge of the diseases of the elephants and even ordinary day to day ailments are referred to them. The veterinarians give them allopathic treatment which does not always suit the animal resulting in complications and consequent death.

Other than forest department, the elephants are now domesticated by temples and resort owners around high profile protected areas like Corbett. Few people also hire them out to tour operators who conduct elephant safaris in forest areas. The number is very low. Wildlife Protection Act has put restrictions like registration of existing animals, ban on sale and purchase etc., which only discourages private individuals to domesticate elephants. Elephant has been declared as a heritage animal by Government of India and an ELEPHANT CONSERVATION AUTHORITY (E.C.A.) has been mooted on the lines of Tiger Conservation Authority, though the amendment in Wildlife Protection Act (W.P.A.) 1972 is yet to be made. The Elephant Project (E.P.) started in early nineties is continuing with funding and guidelines from Ministry Of Environment and Forest (M.O.E.F.), GOI. The funding is still on a small scale to make any dent. The problems of conflict with people is increasing due to shrinking habitat, absence of corridors and connectivities and degradation of their habitat.

With above limitations it is now important for Elephant Project and elephant conservation authority to seriously take up following:

1. Training of Mahauts not only of the department but also of those engaged with private individuals and organizations. The training has to be started at the earliest with the help of retired or experienced old time Mahauts and forest officers who have experience of handling tame elephants. The services of people like Ms. Parbati Baruwa or some veterinary doctors having experience of elephant treatment can be taken. The senior scientists of Wildlife Institute of India, Dehradun engaged in this job can also be available. The training can be imparted in Corbett (Wildlife) training centre at Kalagarh where domestic elephants are available and the habitat around is also suitable. Some other places in South, North-East and Central India can also be identified. One such short course of ten days conducted at Kalagarh Training centre in 2001 under the guidance of Ms. Parbati Baruwa proved very useful and was appreciated by Mahauts.
2. The upkeep of domestic elephants by private owner has to be standardized by E.P./E.C.A. and enforced all over the country.
3. The veterinary care of elephants through trained vets. needs to be ensured so that this large sized animal worshipped by humans do not suffer due to absence of proper treatment.
4. Forest department being the custodian of largest number of domestic elephants needs to standardize the upkeep of elephants, training of Mahauts, treatment of their ailments etc.

The Asiatic elephant is fighting for its survival at both the fronts, that is, wild and domestic. Wild elephants are loosing their habitat very fast and domestic elephant is becoming more and more irrelevant in modern times. The fate of the institution of Mahauts is no better and it will be hard to find a Mahaut of bygone days. Domestic elephants are threatened more because they will not be able to find real Mahauts who can care for them and who can give them the real guidance and training for the purpose for which they are now used. This heritage animal of our country can not afford to be neglected at either of the fronts. Revival of the institution of Mahauts is a real challenge with the Elephant Conservation Authority of India. The number of tame elephants is still very large in our country where the scope of use of this animal in eco-tourism is still relevant.

U'khand Govt. To Observe Sept 9 As Himalayas Day

Dehradun : To conserve the biodiversity of the Garhwal and Kumaon Himalayas, which have a crucial role in regulating the climactic conditions not only of Uttarakhand but also most parts of the country, Chief Minister Harish Rawat on Friday ,announced that September 9 would , now on , be observed as Himalaya Day.

Addressing a meeting with top officials and environmentalists at his Dehradun cantonment residence, Rawat said the state government organizations, would celebrate Himalayas Day in a bid to create more awareness about its unique flora and fauna and the changes caused by climate change and deforestation. The Chief Minister instructed officials to make arrangements for observing September 9 as Himalayas Day across the state.

He fixed the responsibility of organising the day on district magistrates and other senior officers. Rawat said day-long celebrations wild be held under the banner of "Towards Himalayas,

A senior IAS officer said school children and NGO'S will be especially invited to take part in the celebrations planned for September 9.

**Times of India - 05:09:2015
Courtesy - N.C. Madhwal**

MANAGEMENT OF RAJAJI-CORBETT NEED FOR AN INTEGRATED PLANNING

A.S. Negi, IFS

General

The biggest problem facing management of habitats in India is to keep a balance between development and conservation. There is a strong lobby right from the local to the national level advocating fast development of infrastructures and urbanization supported by commercial interests and only a handful of people are raising concerns about conservation issues. The people raising conservation issues are generally not welcome and their voice is dimmed by powerful people in politics, administration, business and media. The development like roads, railways lines, canals, expanding industries, urbanization, pressures of both human and cattle population are increasing very fast. All this is leading to habitat fragmentation and problems of connectivity between adjacent habitats.

The most glaring example is that of the Tarai forests in the foothills of the Himalayas in India and Nepal. Almost 50 years ago there was a 1600 km. long necklace of rich forests and grasslands stretching along outer reaches of Himalayas straddling the India/Nepal border. This stretch better known as Tarai Arc is today fragmented into small habitats in both the countries and no single reserve is large enough to maintain a viable population of large mammals like elephants and tigers without the opportunity for them to disperse from one refuge to another.

Looking back into the habitat and distribution of tigers and Asian elephants in its range globally, it is evident how these important charismatic mammals have shrunk to population levels which are causing concerns for their very survival. Three of the 8 sub species of tigers are already extinct from the outer margins of Tiger range. Fourth sub-species, the south, China Tiger has shrunk to a critical level. The remaining populations are also badly fragmented and isolated. The situation of Asian elephants is no better.

Rajaji-Corbett is the North-Western limit of tigers and Asian elephants. This has been classified as Tiger Conservation Unit (TCU) No. 1 by Tiger experts. On the basis of indices for habitat integrity, poaching pressure and population status the TCUs have been ranked as level I, II and III all over the tiger range in the decreasing order of their importance and Rajaji Corbett has been ranked as level ITCU.

Past History

Rajaji-Corbett was part of contiguous Tarai Arc Landscape extending from river Sharda bordering Nepal in the East to river Yamuna bordering H.P. in the West. It has rich Sal forests with patches of mixed forests, riverine forests and grasslands. Due to its rich bio-diversity and presence of rich wildlife, Corbett N.P. was created in 1936, which was later extended. Rajaji N.P. was created out of Chilla, Motichur and Rajaji Sanctuaries in 1983 and Sona Nadi Sanctuary was created in 1987. The approximate area in early fifties was over 7,000 sq.kms of contiguous forest. Just after independence, large chunks of Tarai grasslands and mixed forests were cultivated by people displaced from Pakistan and a large habitat was lost to agriculture.

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In sixties there was a move to replace forest grasslands and mixed forests into monoculture Eucalyptus and Poplar plantations and later on Teak was also planted. Four mechanized plantation divisions were created and by late eighties more than 1000 km² mixed forest was converted into monoculture. The area was leased out for agricultural crops along with raising of Plantations which further degraded the habitat and depleted the wildlife.

In 1991 about 800 km² of buffer area was added to the Corbett National Park and brought under the intensive wildlife management of Corbett Tiger Reserve. In 1994, three villages were relocated from the southern boundary of Corbett Tiger Reserve and about 200 ha. area returned to the prime habitat. This experiment was extremely successful. Few of the monoculture plantations in the buffer were replaced by mixed plantations and agriculture leases were stopped in the buffer area brought under the control of Corbett Tiger Reserve.

Some prime wildlife habitats rich in bio-diversity still remain outside and are not being managed properly from wildlife point of view such areas are Kotari (including Kolhuchaur area), Dogadda and Laldhang Range of Lansdowne Forest Division (F.D.), Nandhaur Valley of Haldwani FD, Sitabani-Kota bag area of Ramnagar F.D., Lansdowne F.D. and Chiriyapur and Shyampur Ranges of Hardwar FD. These areas are important as corridors and connectivity between Prime Wild Life habitats.

The creation of new State of Uttaranchal has reduced about 32 km² area of the buffer of Corbett Tiger Reserve in the southern part from its management and is now part of Bijnor Forest Division of U.P. Entire Bijnor Plantation Division forming part of the buffer of Sonnadi Sanctuary is also no more within Uttaranchal. Shivalik Forest Division close to Rajaji National Park is also now part of U.P. The sensitivity along southern boundary of Corbett Tiger Reserve and Rajaji National Park has increased due to problem associated with interstate boundary.

Present Status

Rajaji Corbett Landscape has now following categories of forest areas:

- | | |
|--|---|
| 1. Protected Area | 1. Corbett N.P.- 521 km ² |
| | 2. Sona Nadi W.L.S – 301 km ² |
| | 3. Rajaji N.P. - 820 km ² |
| | Total - 1642 km² |
| 2. Area Managed as buffer of above P.A.'s | 1. Buffer of C.N.P. and Sona Nadi W.L.S under C.T.R management = 464 km ² (since 1991) |
| 3. Area managed under normal Working plans of Forest Divisions | 1. Part of Pithoragarh Forest Div.-50km ² |
| | 2. Haldwani Forest Div.-800 km ² |
| | 3. Ramnagar Forest Div.- 500 km ² |
| | 4. Part of Hardwar Forest Div. 50km ² |
| | 5. Dehradun Forest Div.- 400 km ² |
| | 6. Shivpuri Range of Narendra Nagar Forest Div. -50km ² |
| | 7. Lansdowne Forest Div. – 400 km ² |
| | Total - 2250 km² |

4. Areas managed under monoculture plantations

1. Tarai East Forest Div. 500 km²
 2. Tarai Central Forest Div. 400 km²
 3. Tarai West Forest Div. 400 km²
 4. Part of Hardwar Forest Div. 50 km²
- Total- 1350 km²**

5. Area now falling in U.P.

1. Bijnor Forest Div. including areas close to C.T.R. 500 km²
 2. Shivalik Forest Div. 350 km²
- Total - 850 km²**

The above areas have now been fragmented in several smaller isolated blocks, some of them no more viable for tigers and elephants. During a recent survey of presence & absence of tigers conducted by Operation Eye of the Tiger – India (Dehradun based NGO) it was found that the tiger was absent from Shivalik, part of Dehradun, Shivpuri range, Bijnor division & part of Hardwar division.

The Bottlenecks

1. Large forest areas in Nepal across Sarda river have been clear felled and converted into agriculture Land & human habitation.
2. Haldwani – Kathgodam area has overgrown, there is heavy mining activity in Gola river and there is no connectivity between areas East and West of Gola river.
3. Due to several resorts coming up along the right bank of Kosi, the connectivity for elephants is becoming critical.
4. Due to overgrowth of Kotdwar town and increased traffic on Kotdwar-Pauri road the connectivity has become critical for elephants on either side of Khoh river.
5. There is hardly any connectivity across river Ganga at Hardwar. There has been a long drawn struggle for this small corridor-due to apathy of Army towards this sensitive issue of conservation importance, without any success so far.

Possible Solutions

The ideal solution for such a landscape as far as management of large mammals such as Asian elephants and tigers is concerned would require following;

- (a) Landscape planning and management including management of existing forest Divisions outside PAs.
- (b) Checking further habitat disintegration and degradation and establishing some vital corridors & connectivity on priority basis.
- (c) Checking poaching and illicit felling.
- (d) Awareness building & eco development measures.

Looking at the present scenario, we have not been doing anything like landscape planning of habitats. There are two set of criteria of management, one for PAs and other for RFs. Even among PAs we have separate management plans for each PA and there is no scope for their integration at landscape level because in between there are RFs managed under separate sets of working plans. The working plans are prepared for different FDs for different periods and each working plan is independent. It does not look into the problems at landscape level. The working plans of Forest Divisions

do not have proper prescriptions for wildlife management or habitat management. Due to lack of integrated approach in habitat management the following difficulties are being faced:

1. Individualistic approach towards cases related to transfer of forest land for development works, resulting in loss of connectivity and habitat disintegration.
 2. Continuous patches of monoculture forest crops leading to loss of fodder and prey and finally causing human, wildlife conflicts.
 3. Acceleration of man-animal conflicts.
 4. Isolated approach to Gujjar resettlement leading to delays and ultimate destruction of habitat.
 5. Lack of vision for management of large mammals such as elephants and tigers.
 6. Lack of funds for planning at landscape levels.
 7. Lack of research and monitoring at Landscape level.
- It is therefore most essential to have landscape planning and management as far as wildlife and their habitats are concerned. Following steps are immediately needed;

A. At Landscape Level:

- (i) Preparation of a broad landscape vision plan.
- (ii) Guidelines for preparation of working plans and management plans on a landscape level.
- (iii) Restoration of corridors and connectivity.
- (iv) Identification of rich biodiversity areas and managing them as mini cores.
- (v) Coordination with neighbouring state/country.
- (vi) Involving international and national funding agencies.
- (vii) Relocation or resettlement plan for Gujjars or any other people wanting to settle away from Protected Areas and Reserve Forests.
- (viii) Dealing of forest land transfer cases at landscape level.
- (ix) Management plans for elephants and tigers.
- (x) Research and monitoring.
- (xi) Protection measures such as revival of wildlife regions for checking poaching.

B. At Local, Divisional or P.A. Level

- (i) Critical review of working/management plans.
- (ii) Prescriptions for conversion of part of monoculture forest plantations into miscellaneous eco- friendly habitat with local species in such a way that fodder and prey availability increases.
- (iii) Identification of mini core areas in various forest Divisions.

Examples – Kolhuchaur in Lansdowne Forest Division

- Sitabani in Ramnagar Forest Division.
 - Kaladhunga – Ladhiya Valley in South Pithoragarh Forest Division.
 - Nandhaur valley in Haldwani Forest Division.
 - Part of Shyampur Range adjoining Rajaji NP in Hardwar Division.
- (iv) Conservation friendly prescription in these mini core areas in the WPs of respective Forest Divisions.
 - (v) Orientation and training of field staff of non-PAs in wildlife.

- (vi) Special attention on wildlife protection in mini cores and other important wildlife areas.
- (vii) Co-ordination with nearest Forest Division or PA for corridor restoration and management.
- (viii) Co-ordination with wildlife regional staff at local level and Chief Wildlife Warden at State level.
- (ix) Efforts for mitigation of damages by wildlife.
- (x) Plantation of wild fruit bearing trees in the regular plantations and non-removal of these trees during felling operations.
- (xi) Arrange visit of Forest Division field staff in nearby PAs.
- (xii) Creation of waterholes and viewing machans at appropriate places in RFs-specially the mini core areas.
- (xiii) Motivate Gujjars to settle outside RFs and help in resettlement process as and when required.

Rajaji-Corbett is synonymous to the important North-Western habitat of elephants and tigers in India which extends from Sarda in East to Yamuna in the West. With prestigious PAs such as Corbett and Rajaji it would not be difficult to illicit support for restoration of integrity of this important and critical habitat.

References

- ❖ Johnsingh, AJT. & Negi, AS (1998) Only disturbance free habitats can save the tiger, cat News 28.4
- ❖ Johnsingh, AJT. & Negi, AS (2003) Status of Tiger & Leopard in Rajaji Corbett Conservation Unit, Northern India, Biological Conservation 111, 385-393.
- ❖ Johnsingh, AJT. ; Qureshi, Qumar ; Goel, SP ; Rawat, GS ; Ramesh K., David Ashish ; Rajapandian, K & Prasad, Somya (2004) Conservation Status of Tiger associated species in the Tarai Arch Landscape, India : A project report.
- ❖ Management Plans of C.T.R. & Rajaji National Park.
- ❖ Working Plans of Haldwani, Ramanagar, Lansdowne & Hardwar F.D.'s.

HOW CHAMELEONS CHANGE COLOUR

Geneva : Light-reflecting cells in the skin provide chameleons their uncanny colour-changing abilities that help them attract mates and ward off predators, scientists have found. Unlike other animals that change colour, such as the squid and octopus, chameleons do not modify their hues accumulating or dispersing pigments within their skin cells, the researchers found. Instead, the lizards rely on structural changes that affect how light reflects off their skin. Researchers found that chameleons have two superposed thick layers of iridophore cells - iridescent cells that have pigment and reflect light.

The Hindu, March, 11, 2015 (Courtesy - Dr. S.P. Singh)

पर्यावरण सुरक्षा—मानव सुरक्षा

— आनन्द सिंह नेगी, भा0व0से0 —

जब हम “प्लेनेट अर्थ” याने पृथ्वी की बात करते हैं तो उसके अन्तर्गत पहाड़, नदी, तालाब, समुद्र, मैदान, पठार, घाटियाँ आदि के साथ-साथ विभिन्न प्रकार के पेड़ पौधे व जीव जन्तुओं को भी सम्मिलित करना आवश्यक है। चूँकि यही जीवित वस्तुएं इसे अन्य आकाश पिण्डों से भिन्न बनाती हैं। अभी तक किसी दूसरे प्लेनेट पर जीवन के प्रमाण नहीं मिले हैं। अतः “प्लेनेट अर्थ” की रक्षा का सीधा मतलब है कि इस पर विद्यमान सभी प्रकार के जीवन की रक्षा। पृथ्वी पर जीवन किस-किस रूप में है, इसके लिए कुछ आंकड़े देना आवश्यक है। :-

जीवन के प्रकार	ज्ञात प्रजातियों की संख्या	अनुमानित कुल प्रजातियाँ
कीड़े मकोड़े	8,74,161	3 करोड़
उच्च पेड़ पौधे	2,48,400	2,75,000—4,00,000
निम्न पौधे (Fungi & Algae)	73,900	अज्ञात
(कीड़े मकोड़ों को छोड़ कर) Invertebrates	1,16,873	करोड़ों की संख्या में
सूक्ष्म जीव जन्तु (Micro-organisms)	36,600	अज्ञात
मछली	19,056	21,000
पक्षी	9,040	लगभग 98 प्रतिशत ज्ञात हैं
सरीसृप व एम्फीबियन	8,962	लगभग 98 प्रतिशत ज्ञात हैं
स्तनपाई जन्तु	4,000	लगभग 98 प्रतिशत ज्ञात हैं
योग	13,90,992	लगभग एक करोड़ प्रजातियाँ। यदि कीड़े मकोड़ों की अनुमानित प्रजातियों का अनुमान सही हो तो 3 करोड़ से अधिक प्रजातियाँ।

पर्यावरण का अर्थ है पृथ्वी पर मौजूद सभी निर्जीव व जीवित पदार्थ, वायुमण्डल, सूर्य तथा वे सभी तत्व जो जीवन को प्रभावित करते हैं अर्थात् नदी, पहाड़, चट्टान, मिट्टी, भूमिगत जल, समुद्र, जंगल, पेड़-पौधे, कीड़े-मकोड़े, जीव-जन्तु, वायुमण्डल चन्द्र व सूर्य ग्रह सब पर्यावरण को बनाते हैं। आधार-भूत सन्तुलन प्रकृति का एक महान गुण है। अगर यह सन्तुलन बना रहे तो सब कुछ ठीक चलता रहता है और कोई उथल-पुथल की स्थिति उत्पन्न नहीं होती है। परन्तु मनुष्य द्वारा प्रकृति में विशेषाधिकार की अपेक्षा करने के कारण उनमें प्रकृति सन्तुलन में हस्तक्षेप करके अपने ही अस्तित्व के लिए समस्या उत्पन्न कर ली है। मनुष्य यह भूल जाता है कि वह भी प्रकृति के अनेकानेक प्राणियों में से एक है।

हमारे लिए यह गर्व कि बात है की प्राकृतिक संतुलन व पर्यावरण संरक्षण की शिक्षा हमें ऋषियों—मुनियों द्वारा प्राचीन काल से दी जाती रही है। उन्होंने हमें ऐसी सात्विक जीवन शैली का अनुसरण करने के लिए प्रेरित किया जिससे प्राकृतिक संतुलन में कोई बाधा नहीं पड़ती। 2500 वर्ष से भी पहले भगवान बुद्ध ने अहिंसा की शिक्षा देकर हमें सचेत कर दिया था। सम्राट अशोक महान ने पटना शहर में एक हजार विद्वानों की एक सभा बुलाई थी जो सात महीनों तक चली। सभा की सभी कार्यवाहियों के सार को शिलाखण्डों पर अंकित कर दिया गया और उनको समूचे भारतीय महाद्वीप और तत्कालीन ज्ञात विश्व भर में फैलाया गया। पीपल, जिसे बोधिवृक्ष कहा जाता है और जिसकी

छांव तले भगवान बुद्ध ने बैशाख पूर्णिमा के दिन बोधिज्ञान प्राप्त किया था, विश्व का सबसे अधिक पूज्य बोधि वृक्ष बना। बोधिज्ञान प्राप्त करने के बाद वे कपिलवस्तु में बरगद के कुंज में रहे और वट वृक्ष को भी पूज्य बना दिया। हिन्दुओं की पवित्र पुस्तक "गीता" में भी भगवान श्रीकृष्ण कहते हैं कि वृक्षों में मैं पीपल हूँ। सभी श्रेष्ठ धार्मिक पुस्तकों में वृक्षों एवं वन्य जीवों की रक्षा को किसी न किसी रूप में महत्व दिया गया है।

मनुष्य द्वारा अपनी जीवन शैली को अप्राकृतिक बनाने, अत्यधिक औद्योगीकरण, शहरों के विस्तार, युद्ध की तैयारियों आदि के कारण विश्व भर में पर्यावरण को नए खतरे उत्पन्न हो गए हैं उन पर भी एक नजर डालनी आवश्यक है।

आधुनिकतम सर्वेक्षण के अनुसार प्रतिवर्ष संसार की लगभग 6 करोड़ हेक्टेयर भूमि वृक्ष विहीन कर दी जाती है। अकेले भारत में प्रतिवर्ष 16 लाख हेक्टेयर भूभाग में वनों को उजाड़ दिया जाता है। वैज्ञानिकों ने निष्कर्ष निकाला है कि पौधों की किसी एक प्रजाति के लुप्त होने से कीटों, जानवरों या अन्य पौधों की 10 से 30 तक जातियाँ लुप्त हो जाती हैं। भारत में 70 स्तनधारी प्राणियों, 40 पक्षियों तथा 20 एम्फीबियन की प्रजातियाँ लुप्त होने के कगार पर हैं। भारतीय चीता पहले ही लुप्त हो चुका है। आई०यू०सी०एन० ने भारत में 140 ऐसे पौधों की सूची तैयार की है जो तस्करी एवं पर्यावरण के उथल-पुथल के कारण विलुप्त होने के खतरनाक दौर पर हैं। पिछले 2000 वर्षों में जो प्रजातियाँ विलुप्त हुई हैं उनमें आधी से अधिक 1900 ई० के बाद ही विलुप्त हुई हैं।

ओजोन की परत या "ओजोन मण्डल" जो सूर्य की घातक अल्ट्रावाइलेट किरणों से धरती के समस्त जीव-जन्तुओं और पेड़ पौधों की रक्षा करती हैं, में छेद हो गया है। जिसका आकार उत्तरोत्तर बढ़ता जा रहा है। अल्ट्रावाइलेट किरणें अदृश्य ऊर्जाकण हैं जो प्राणी-कोशिकाओं को बदल देती हैं तथा त्वचा-कैंसर उत्पन्न करती हैं। ओजोन मण्डल में ओजोन की एक प्रतिशत कमी होने से पृथ्वी पर पहुँचने वाली अल्ट्रावाइलेट किरणों में दो प्रतिशत की वृद्धि हो जाती है। इन किरणों से प्राणी-कोशिकाओं के नाभिक में मौजूद आनुवांशिक पदार्थ (डी०एन०ए०) में भी तोड़-फोड़ हो जाती है जिससे जीवों में आनुवांशिक विकृति होने लगती है। इन किरणों से शरीर का प्रतिरोधी तन्त्र कमजोर पड़ने लगता है, आँखों पर गहरा कुप्रभाव पड़ता है तथा यह किरणें छोटे-छोटे जीव जन्तुओं को तुरन्त खत्म कर देती हैं। सूक्ष्म जीव तथा विषाणु तत्काल मर जाते हैं। पौधों में प्रकाश संश्लेषण की गति में कमी हो जाती है जिससे उनकी वृद्धि रुक जाती है। ओजोन मण्डल को सर्वाधिक क्षति क्लोरोफ्लोरो कार्बन यौगिक द्वारा होती है। वैज्ञानिक गणना के अनुसार क्लोरीन का एक परमाणु ओजोन के एक लाख अणुओं को नष्ट कर देता है। नाइट्रिक आक्साइड गैस ओजोन की परत को क्षति पहुँचाने वाला दूसरा मुख्य कारक है। परमाणु बम विस्फोट या नाभिकीय विस्फोट भी ओजोन मण्डल के लिए बहुत बड़ा खतरा है। एक मेगाटन परमाणु बम विस्फोट से पाँच हजार टन नाइट्रिक आक्साइड गैस बनती है जो पचास लाख टन ओजोन गैस को सहज ही नष्ट कर सकती है।

वनों की अंधाधुंध कटाई से भी ओजोन मण्डल को हानि पहुँचती है। वनों की कमी के कारण आक्सीजन गैस के निर्माण में कमी होती जा रही है। परिणामस्वरूप ओजोन गैस के निर्माण में भी कमी होती जा रही है।

पारिस्थितिकीय विशेषज्ञों के अनुसार इस समय अत्यन्त सूखे, पूर्ण सूखे और अर्द्ध सूखे क्षेत्र पृथ्वी के 43 प्रतिशत क्षेत्र में फैले हैं। इन क्षेत्रों में 7 प्रतिशत रेगिस्तान मानव द्वारा निर्मित है। वनों की कटाई के कारण वातावरण में लगातार कार्बनडाइ आक्साइड की वृद्धि से प्रत्येक हरा पौधा कार्बनडाइ आक्साइड को अवशोषित करता है। कार्बनडाइ आक्साइड की वृद्धि होने से तापमान में वृद्धि हुई है। पिछले पचास वर्षों में वातावरण के तापमान में 1° सैल्सियस की वृद्धि हुई है। पिछले 100 वर्षों में 24 लाख टन प्राणवायु वायुमण्डल से समाप्त हो गई है तथा 36 लाख टन कार्बनडाइ

आक्साइड की वृद्धि हुई है। यदि कार्बनडाइआक्साइड की मात्रा में इसी तरह वृद्धि होती रही तो वह दिन दूर नहीं जब पृथ्वी का काफी बड़ा भाग जलमग्न हो जायेगा। वैज्ञानिकों ने अनुमान लगाया है कि सन् 2030 तक महासागरों के जलस्तर में 3 से 5 फुट की बढ़ोतरी हो सकती है।

एक अनुमान के अनुसार हमारे देश में प्रतिवर्ष 60 करोड़ टन उपजाऊ मिट्टी भूमि क्षरण के कारण बह जाती है। इस मिट्टी में पोटैश, नाइट्रोजन तथा फास्फोरस की मात्रा भी बहती है। उसकी कीमत 700 करोड़ रुपये आंकी गई है।

महानगरों में हर प्रकार के प्रदूषण की समस्या बढ़ती जा रही है। ध्वनि प्रदूषण, वायुप्रदूषण, जलप्रदूषण सर्वाधिक महानगरों को ही प्रभावित कर रहे हैं। औद्योगिक चिमनियों व वाहनों का धुआं शहरों को नरक बना रहा है। एक अनुमान के अनुसार भारत के महानगरों में 800 से 1000 टन कार्बनडाइआक्साइड वायु मण्डल में प्रतिदिन जा रही है जिसका आधा वाहनों से, एक पचासवाँ हिस्सा खाना पकाने तथा शेष औद्योगिक चिमनियों से उत्पन्न होता है। इसी प्रकार दिल्ली जैसे महानगरों में 600 माइक्रोग्रेन धूल कण प्रति घनमीटर वायुमण्डल में मिलते हैं। हमारे महानगरों में ध्वनि प्रदूषण का स्तर 90 डेसीबल के आसपास रहता है जबकि सामान्यतः यह 20 से 40 डेसीबल होना चाहिए। ध्वनि प्रदूषण से रक्तचाप, हृदय रोग आदि उत्पन्न होते हैं। जल प्रदूषण का यह आलम है कि हमारे देश का 70 प्रतिशत जल प्रदूषित है। यमुना का पानी दिल्ली और आगरा के मध्य पीने योग्य नहीं रहा है।

ग्रामीण अंचलों में भी पर्यावरण प्रदूषण की समस्या है, जो अन्य रूपों में है। ग्रामीण महिलाओं को विशेष प्रकार के कष्ट झेलने पड़ते हैं। भारत के 40 प्रतिशत लोग जिसमें अधिकांशतः महिलाएँ हैं केवल खाना पकाने के लिए लकड़ी व अन्य प्रकार की टहनियों आदि बटोरने में लगी रहती हैं। हमारे देश में 17 से 20 करोड़ टन जलौनी लकड़ी की खपत प्रतिवर्ष होती है यदि इनका विकल्प न निकाला गया तो हमारे सारे जंगल अगले 25 वर्षों में समाप्त हो जाएँगे। हमारे जैसे विकासशील देशों में जंगल जलौनी लकड़ी के लिए नष्ट किये जाते हैं, परन्तु विकसित देशों में भी कागज, न्यूजप्रीट, माचिस व अनावश्यक पैकेजिंग के लिए बर्बाद किया जाता है। सन् 1950 से अब तक दुनियाँ के आधे जंगल बर्बाद हो चुके हैं। दुनियाँ में सभी गरीब लोग खाना पकाने के लिए लकड़ी का प्रयोग करते हैं। दुनियाँ में तीन चौथाई लोग खाना पकाने, मकान बनाने तथा नाव बनाने के लिए लकड़ी का इस्तेमाल करते हैं। जब जलौनी लकड़ी उपलब्ध नहीं होती है तो गोबर के उपले प्रयोग में लाए जाते हैं जिससे खेती में खाद की कमी हो जाती है और गरीबी का क्रम जारी रहता है।

पृथ्वी को कैसे बचाया जाय? उक्त सभी समस्याओं को कैसे कम किया जाय? हम में से प्रत्येक किसी हद तक इस त्रासदी के लिए जिम्मेदार है और हम कैसे इन दुष्परिणामों को कम करने में अपना योगदान दे सकते हैं, यह महत्वपूर्ण है।

अधिकांश समस्याओं का समाधान मौजूदा पेड़ों व जंगलों को बचाने तथा अधिक से अधिक पेड़ लगाने में है। कोलकाता कृषि महाविद्यालय के वैज्ञानिकों ने एक अनुमान लगाया है कि एक वृक्ष अपने लगभग 50 वर्षों के औसत जीवनकाल में प्राणीमात्र को लगभग 15.70 लाख रुपये की सेवाएँ उपलब्ध कराता है। जिसमें आक्सीजन उत्पादन 2.5 लाख रुपये, प्रदूषण नियन्त्रण 5 लाख रुपये, भूमि कटान से रक्षा करना तथा भूमि के ऊपजाऊपन को बनाए रखना 2.5 लाख रुपये, पानी के चक्र को नियन्त्रित करने में 3 लाख रुपये, वन्य पशु पक्षियों को शरण देना 2.5 लाख रुपये, तथा प्रोटीन उत्पादन 20 हजार रुपये सम्मिलित हैं।

एक बड़ा पीपल का वृक्ष अपने जीवन काल में 2252 कि०ग्राम कार्बनडाइआक्साइड वायुमण्डल से सोखता है और इसके एवज में 1713 कि०ग्राम प्राणवायु वायुमण्डल में छोड़ता है जो 6 लाख व्यक्तियों को जीवित रखने के लिए पर्याप्त हैं। विभिन्न प्रजाति व विभिन्न ऊँचाई के पेड़ों की 50

फुट चौड़ी पट्टी ध्वनि प्रदूषण को 20से 30 डेसीबल तक सीमित रखने के लिए पर्याप्त है। एक हैक्टेयर वनक्षेत्र 30 से 50 टन प्रदूषण कणों को प्रतिदिन सोखने में सक्षम है। इससे सिटी फारेस्ट के महत्व को अच्छी प्रकार समझा जा सकता है। हमारे देश में वन 30,000 करोड़ रुपये से अधिक का वार्षिक योगदान हमारी अर्थव्यवस्था को देते हैं जो मुख्यतः बाढ़ नियंत्रण एवं मिट्टी की उर्वरा शक्ति के रूप में हैं।

इस प्रकार वृक्ष हमारे पर्यावरण को संतुलित करने में एक महान कार्य करते हैं। वृक्षों से हर प्रकार का संतुलन कायम रहा है, चाहे वह प्रदूषण का हो, विभिन्न प्रकार के जीवों के सम्बन्धों का हो, भूमि के प्रबन्धन का हो, मौसम का हो, आर्थिक स्थिति का हो, जनसंख्या वृद्धि का हो या औद्योगिक इकाइयों के कच्चे माल का हो। बिना वृक्ष के कोई भी तंत्र सुचारु रूप से नहीं चल सकता है भले ही इसका योगदान प्रत्यक्ष हो या अप्रत्यक्ष। परन्तु हम में से प्रत्येक का एक महान दायित्व यह भी है कि हम ऐसा कुछ न करें जिसकी चोट अन्त में वृक्ष पर पड़े। उपभोगवाद व मिथ्याधार को कम करना होगा। उन सभी पदार्थों या वस्तुओं का उपभोग कम से कम करना होगा जिससे प्रत्यक्ष या अप्रत्यक्ष रूप में वनों या पेड़ों पर असर पड़ता है। कागज का उपयोग एक महत्वपूर्ण उदाहरण है। जो आसानी से हर घर में घटाया जा सकता है। अत्यधिक विलासिता की कीमत किसी न किसी को अवश्य चुकानी पड़ती है। अतः विलासिता की वस्तुओं को कम करने में भी पृथ्वी पर बहुत बड़ा उपकार किया जा सकता है। चाहे वह धन की हो, बिजली की हो, पानी की हो या अन्य चीजों की, इसका भी सीधा सम्बन्ध पर्यावरण सुरक्षा से है। सादा जीवन जीना हमें हमारे ऋषि मुनियों ने भी सिखाया। महात्मा गाँधी ने भी सादे जीवन की मिसाल दी और सादा जीवन ही पृथ्वी को विनाश से बचा सकता है, यह हमारा पूर्ण विश्वास है।

पहली बार गिने गुलदार, उत्तराखण्ड में 703

देश में गुलदारों की संख्या का पहली बार अधिकारिक आंकड़ा जारी कर दिया गया। भारतीय वन्यजीव संस्थान (डब्ल्यू आइओ आइओ) की गणना में देश भर में गुलदारों की संख्या 7910, रिकार्ड की गई। जबकि, उत्तराखण्ड में यह आंकड़ा 703 है। हालांकि, गुलदारों की गिनती उच्च हिमालयी क्षेत्रों में न हो पाने से इस संख्या में 400 से 500 का इजाफा और हो सकता है। यानी उत्तराखण्ड में गुलदारों की संख्या 1200 से अधिक होना संभव है।

बाघों की तरह ही भारतीय वन्यजीव संस्थान के विज्ञानियों ने वरिष्ठ वैज्ञानिक डा० वाई० बी० झाला के दिशा-निर्देशन में शिवालिक हिल्स, गंगा के मैदान, मध्य भारत व पश्चिमी घाट के करीब 350 वर्ग किमी क्षेत्रफल में गुलदारों की गिनती की। इसके लिए, कैमरा ट्रैप से लेकर गुलदारों की उपस्थिति के विभिन्न माध्यमों का सहारा लिया गया। सबसे अधिक करीब 4500 गुलदार मध्य हिमालय क्षेत्र में पाये गए। इसके बाद यह संख्या (करीब 2500) पश्चिमी घाट व मध्यम हिमालय में 4400 से अधिक दर्ज की गई। सबसे अधिक गुलदारों की संख्या मध्य प्रदेश में, रिकार्ड हुई। गुलदारों की तादाद में महाराष्ट्र दूसरे, कर्नाटक तीसरे, छत्तीसगढ़ चौथे, तमिलनाडु पांचवे और उत्तराखण्ड का स्थान छठा पाया गया। हालांकि, उत्तराखण्ड के उच्च हिमालयी क्षेत्रों में गणना न होने से स्थिति स्पष्ट नहीं हो पाई। संस्थान के वरिष्ठ विज्ञानी डा० झाला के मुताबिक उच्च हिमालयी क्षेत्रों में गणना की जाती तो उत्तराखण्ड का स्थान गुलदारों की संख्या में दूसरा हो सकता था।

दैनिक जागरण — 11:09:2015, सौजन्य से नरेश चन्द्र मधवाल

हिरन परिवार – संक्षिप्त जानकारी व विशेषताएँ

ए.एस.नेगी

प्रस्तावना

भेड़, बकरी, गाय, भैंस, ऑक्सन (Oxen), हिरन व एण्टीलोप, सुअर, जिराफ, ऊँट तथा दरियायी घोड़ा, खुरवाले जानवर आर्टियोडेक्टायला (Artiodactyla) गण (Order) के अंतर्गत आते हैं जो अधिकांश खुर वाले स्तनधारी (Mammals) जानवरों का समूह है। इन्हें सम-खुर (Even-toed) वाले जानवर भी कहा जाता है। इस समूह को छोटे समूहों (Families) में बांटा गया है जिनमें सबसे बड़ा समूह (Family) बोविडी (Bovidae) है। बोविडी (Bovidae) परिवार में ऑक्सन, भेड़ व बकरी (पालतू व जंगली) तथा एण्टीलोप्स और गजल्स आते हैं। सरविडी (Cervidae) परिवार में सब प्रकार के हिरन (Deer) आते हैं।

पैरों की बनावट

खुर वाले जानवरों की बनावट समझना आवश्यक है। यह जानवर प्राथमिक उपभोक्ता स्तर के हैं। मांसभक्षी जानवरों के पंजे आक्रमण करने के हथियार के रूप में प्रयोग किये जाते हैं तथा बंदर व लंगूर के हाथ-पैर टहनियों को पकड़ने के लिये बने होते हैं, परन्तु इन शाकाहारी जानवरों के पैरों का काम केवल चलने-फिरने व भागने के लिये है। खुर वाले जानवर अपने टखनों के अग्रभाग (Tip of their toes) पर चलते हैं। इससे उनकी गति बढ़ जाती है तथा जमीन के सम्पर्क में कम-से कम भाग रहने के कारण प्रतिरोध भी न्यूनतम हो जाता है। खुरवाले जानवरों में टोज (Toes) की संख्या चार से अधिक नहीं होती। अधिकांश में कुल दो ही टोज क्रियाशील होते हैं। इस प्रकार क्रियाशील टोज की हड्डी प्राकृतिक रूप से लम्बी व मजबूत हो जाती है और शेष टोज लुप्त प्रायः हो जाती है। घोड़े तथा गैंडे में केवल बीच वाली तीसरी टोज की हड्डी बड़ी व मजबूत हुई है जबकि दो खुर वाले अधिकांश जानवरों जैसे ऑक्सन, भेड़, बकरी, एण्टीलोप, हिरन, ऊँट व सुअर आदि में तीसरी व चौथी टोज अन्य की अपेक्षा लम्बी व मजबूत हुई व शेष 3 टोज लगभग समाप्त हो गई हैं। सभी खुर वाले जानवरों में प्रथम टोज नदारत होती है। दूसरी व पांचवी टोज या तो होती ही नहीं है या बहुत छोटी होती है, जैसे गाय, बकरी, भेड़ आदि में देखी जा सकती है। तीसरी व चौथी टोज अर्थात् बीच की दो टोज पूर्णतः विकसित होती है, आकार में बड़ी तथा एक जैसी होती हैं। शरीर की मध्य रेखा इन्हीं के बीच से गुजरती है। इनके बाहर मजबूत खुर होते हैं, जिनकी बनावट ऐसी होती है कि दोनों खुर ऐसे प्रतीत होते हैं, जैसे एक को ही दो भागों में बांटा गया हो। इनके पैरों की हड्डियों की बनावट भी इस तरह होती है कि इन्हें हर तरह की जमीन पर चलने में मदद मिल सके। इनके पैरों की इस तरह की बनावट से ही यह जानवर अपने दुश्मनों से बच पाते हैं तथा मैदान, चट्टान, दल-दल आदि सभी प्रकार की जमीन पर भोजन की खोज में लम्बी दूरी तय कर सकते हैं।

दांतों की बनावट

खुर वाले जानवरों का मुख्य भोजन घास तथा अन्य मोटी वनस्पति है जो पाचन योग्य होने से पूर्व अच्छी तरह चबाया जाना आवश्यक है। इन जानवरों के अनेक दुश्मन होने के कारण यह सम्भव नहीं है कि यह लम्बे समय तक घास के खुले मैदानों में रह कर घास व टहनियों को चबाते रहें अतः इन्हें अपना भोजन कम से कम समय में पेट के अन्दर डालना पड़ता है, जिसकी मात्रा भी अधिक होती

है। भोज्य पदार्थ को जानवर सुरक्षित स्थान पर जुगाली करके पचाने योग्य बना सकते हैं। इन बातों के अनुरूप ही इनके दांतों की बनावट होती है। अतः इन जानवरों के चबाने वाले दांतों (Grinding teeth) की बनावट इसी के अनुरूप होती है। इन जानवरों के चबाने वाले दांत चौड़े, धारदार व मजबूत इनेमल के बने होते हैं। ऊपरी जबड़े के अग्रभाग में इस समूह के किसी भी जानवर के इन्सिजर (Incisor) नहीं होते हैं। इसके स्थान पर खाली जबड़ा रहता है। ऊपरी जबड़े में कैनाइन दांत (Canine teeth) या तो ऑशिक (Rudimentary) होते हैं या होते ही नहीं हैं। निचले जबड़े में इन्सिजर व कैनाइन दो प्रकार के दांत होते हैं, जो एक जैसे ही होते हैं। भोज्य पदार्थ जैसे घास आदि मुँह में जीभ के द्वारा ढूँसा जाता है, जो खुरदुरी होती है।

उदर की बनावट

इनके उदर में चार अलग-अलग खाने होते हैं। पहले व सबसे बड़े खाने में जल्दी-जल्दी निगला हुआ घास रहता है जो यहां कुछ कोमल होकर छोटे-छोटे ग्रासों में वापस मुँह में आता है और जुगाली से अच्छी तरह से चबाने के बाद यह दूसरे खाने में जाता है जिसे Reticulam कहते हैं। यहाँ पर इसे अच्छी तरह से चबाने के बाद यह तीसरे व चौथे खाने में जाता है। जिन्हें क्रमशः ओबेसम और ओबेमेसम कहते हैं। वास्तविक पाचन चौथे खाने में होता है। इन्हें Ruminants कहते हैं।

हिरन व मृग (Deer and Antelope) तथा अन्य बोविडि और सरविड भी जुगाली करने वाले जानवर हैं। इन्हें Ruminant कहते हैं। जुगाली करने वाले जानवरों की विशेषता है ऊपरी जबड़ों में काटने वाले दांतों (Incisors) की अनुपस्थिति, चार खानों वाले उदर तथा सींगों की उपस्थिति।

सींगों की उपस्थिति

बोविडी परिवार के सभी जानवरों के सींगों में दो भाग होते हैं। खोपड़ी से उगती हुई ठोस हड्डीनुमा कोर तथा उसके बाहर का आवरण खोखला होता है जिसे पूरा हटाया जा सकता है। इसीलिये इनको खोखले सींग वाले जानवर भी कहते हैं। बोविडी के विपरीत सरविडी (Cervidae) परिवार के जानवरों, जिनमें हिरन आते हैं, ऐसे जुगाली करने वाले जन्तु हैं जिनके सींग ठोस होते हैं। बोविडी परिवार के जन्तुओं के सींग उनके पूरे जीवन काल तक चलते हैं। भले ही बाहरी आवरण कट-फट सकता है। सरविडी या हिरन परिवार के जन्तुओं के सींग एक निश्चित अवधि में गिर जाते हैं तथा तत्काल नये सींग भी उग जाते हैं। नये उगने वाले सींगों के ऊपर आरम्भ में खाल का आवरण होता है जो बाद में रगड़ कर हटा दिया जाता है। बोविडी के अधिकांश सदस्यों में नर व मादा दोनों में सींग होते हैं परन्तु हिरन परिवार में अधिकांशतः नर में सींग होते हैं।

इस प्रकार खुर वाले जानवरों के मुख्यतः निम्न समूह हैं:

जंगली ऑक्सेन, शीप व गोट—

उदाहरण— वाइल्ड ऑक्सन— गौर या भारतीय बाइसन, बान्टेंग याक तथा जंगली भैंसा। शीप—मार्कोपोलो शीप, नयन व भरल। गोट— वाइल्ड गोट, आइबेक्स, मारखोर, नीलगिरी थार व हिमालयन थार।

गोट एण्टिलोप—

उदाहरण— गोरल, सेराऊ, ताकिन व तिबतन एण्टिलोप।

एण्टिलोप्स व गजल—

उदाहरण— नीलगाय, चौसिंगा, चिंकारा, काला हिरन।

हिरन—

उदाहरण— सांभर, कश्मीर स्टैग या हंगुल, थामिन या मनिपुर डियर या ब्रो—एण्टलर डियर, बारासिंघा, चीतल, पाड़ा, इण्डियन चिवरोटिन, काकड़, कस्तूरा मृग।

डियर व एण्टी लोप में अन्तर

डियर

सींग ठोस होते हैं जिन्हें एण्टलर कहते हैं। निश्चित अवधि पर एण्टलर गिरते हैं तथा पुनः उग आते हैं। नये एण्टलर कोमल खाल से ढके होते हैं जिसे वेलवेट (Velvet) कहते हैं।

सींग केवल नर में पाये जाते हैं तथा अधिकांशतः सींगों में शाखायें होती हैं जिन्हें टाइन्स कहते हैं। अलग-अलग प्रकार की प्रजातियों में टाइन की संख्या कम या ज्यादा होती है।

कस्तूरा मृग के अलावा किसी में भी गॉल ब्लैडर नहीं पाया जाता है।

चारों पैरों में ऊपर का खुर (Lateral digit) पूरी तरह विकसित होता है।

अधिकांशतः घने जंगलों में पाये जाते हैं।

उदाहरण— चीतल, सांभर, हंगुल या कश्मीरी स्टैग, बारासिंघा, मुंटजैक, पाड़ा, मणिपुर डियर या थामिन या ब्रो-एण्टलर्ड डियर, कस्तूरा मृग।

नोट: गोरल (धुरड़), सेराव व ताकिन, गोट-एण्टीलोप की श्रेणी में आते हैं, जिनके गुण गोट तथा एण्टीलोप दोनों समूहों के जन्तुओं से मिलते हैं।

हिरन परिवार की कुछ और विशेषताएँ

हिरनों में सींग को एण्टलर कहते हैं। यह केवल नर में पाये जाते हैं। आरम्भ में ये वेलवेट की घुंड़ी के समान उगते हैं। बच्चे बड़े होने लगते हैं तो पहले वर्ष केवल दो लम्बे एण्टलर निकलते हैं जिन्हें स्पाइक्स (Spikes) कहते हैं। अगले वर्ष में इन्हें गिराकर जो एण्टलर निकलते हैं, इनमें शाखाएँ

एण्टी लोप

सींग खोखले होते हैं जिनका अन्दर का भाग ठोस हड्डी का बना होता है तथा बाहरी आवरण खोखला होता है जो पूरी तरह हटाया जा सकता है। सींग पूरे जीवन काल तक चलते हैं भले ही बाहरी आवरण कट-फट सकता है।

सींग बहुधा नर व मादा दोनों में पाये जाते हैं तथा केवल दो ही सींग होते हैं। इनमें शाखायें नहीं होती हैं।

सभी प्रजातियों में गॉल ब्लैडर पाया जाता है।

लेटरल डिजिट कम विकसित होता है।

अधिकांशतः मरुस्थली भूमि तथा खुले मैदानों में मिलते हैं।

उदाहरण— काला हिरन, चिंकारा, चौसिंगा नीलगाय, चिरु या तिबतन एण्टीलोप।

निकलती हैं, जिन्हें टाइन्स (Tines) कहते हैं। सांभर, चीतल व पाड़े में प्रत्येक एण्टलर से तीन टाइन निकलती हैं। हंगुल, बारासिंघा तथा थामिन में एण्टलर की कई शाखाएँ होती हैं। माथे में जहाँ से एण्टलर निकलते हैं, उसके थोड़ा ऊपर एक रिंगनुमा ग्रोथ होती है जिसे बर (Burr) कहते हैं। हंगुल में एक-एक टाइन ठीक बर के ऊपर होती है जिन्हें ब्रोटाइन कहते हैं। ब्रोटाइन के ऊपर दो स्पष्ट टाइन होती है, निचली को बेज (Bes) व कुछ ऊपर वाली को ट्रेज (Tres) या त्वलंस कहते हैं। एण्टलर के सबसे ऊपर भाग में टाइन का एक समूह होता है जिसे क्राउन कहते हैं। अधिकांशतः हंगुल में प्रत्येक एण्टलर में 5 शाखाएँ (Points) होती हैं। बारासिंघा में Points की संख्या 20 तक हो सकती है। हर वर्ष एण्टलर के गिरने के बाद अधिक बड़े एण्टलर उगते हैं परन्तु कुछ उम्र के बाद उनका आकार घटने लगता है। नया उगा हुआ एण्टलर खाल के अन्दर रहता है। खाल मुलायम व रोंयेदार होती है जो वेलवेट (velvet) की तरह दिखाई देती है। यह खाल बहुत कोमल होती है। जिसमें अनेक रक्त कोशिकाएँ रहती है। ये आसानी से खुले घास के मैदानों में आ जाते हैं तथा अकेले रहते हैं। अपरिहार्य रूप में आपस में लड़ाई होने पर वे अगले पैरों को खड़ा करके लड़ते हैं, जिस प्रकार मादाएँ (Does) लड़ती हैं।

जब एण्टलर का विकास पूर्ण हो जाता है तो जहाँ से वे उगते हैं ठीक उसी के ऊपर एक ठोस हड्डी की रिंग बन जाती है जिसे "बर" कहते हैं। यह धीरे-धीरे संकरी होती जाती है तथा रक्त कोशिकाएँ सूख जाती हैं बाद में कोमल खाल भी सूख जाती है जिसे हिरन पेड़ों व झाड़ियों पर रगड़ते हैं जिसके निशान जंगली पेड़ों में दिखाई देते हैं। बारासिंघा लम्बी घास के मैदानों में ही रहता है। एण्टलर का कठोर होने तथा साफ रहने का समय इनके मदकाल (Rutting season) से मिलता है। एण्टलर दुश्मनों से रक्षा के अलावा मादाओं को पाने लिये आपस में लड़ने के उत्तम साधन हैं। मदकाल के बाद हिरनों के एण्टलर कुछ समय के लिये गिर जाते हैं। कम उम्र के नर अधिक उम्र वालों से जल्दी एण्टलर गिराते हैं। एण्टलर गिराने का समय अलग-अलग आवास में अलग-अलग हो सकता है। यह भी कहा गया है कि अच्छे घास वाले क्षेत्रों में एण्टलर जल्दी गिर जाते हैं। एण्टलर उगने का समय सभी जगह घास की अधिक उपलब्धता के समय से मिलता जुलता है। घास, हिरनों का मुख्य आहार है जिसमें कैल्शियम की अधिक मात्रा को शरीर से निकालने के लिए एण्टलर का गिराना आवश्यक है। मादा में यह बच्चे के जन्म व दूध पिलाने से निकल जाता है। हिरनो में अपने बचाव के लिए उनमें सूंघने, देखने व सुनने की तीव्र शक्ति तथा फुर्ती से भागने की क्षमता अधिक होती है। हिरन केवल घने जंगलों तथा घास के मैदानों में पाये जाते हैं तथा मरुस्थली प्रान्तों में कभी नहीं पाये जाते हैं। पुरानी दुनियाँ में यूरोप व एशिया में ही पाए जाते हैं तथा सहारा के दक्षिण की तरफ भी पाए जाते हैं। नई दुनियाँ में पाई जाने वाली हिरन की शेष प्रजातियाँ बिल्कुल भिन्न प्रकार की होती हैं।

बारासिंघा तराई की दलदली भूमि में तथा मध्य प्रदेश के सूखे वनों में भी पाया जाता है परन्तु इसकी बनावट में भिन्नता के कारण उनकी दो भिन्न उप जातियाँ कही जाती हैं। अधिकांश हिरनों की खाल का रंग मौसम के साथ बदलता है। इनकी ग्रीष्म कालीन खाल (कोट) हल्के रंग की तथा शीतकालीन गहरे रंग की होती है। यह जंगल के रंग के साथ मेल खाने के लिये होता है। ग्रीष्मकालीन कोट में अधिकांशतः सफेद धब्बे होते हैं। इसी प्रकार का अन्तर बारासिंघा तथा पाड़े में भी पाया जाता है। यह जानवर को छिपने में सहायक होता है। चीतल, जो भारत के वनों में बहुतायत में पाया जाता है, उसमें यह धब्बे पूर्णतः विकसित होते हैं जो शरीर के आकार को तोड़कर दुश्मनों से बचाव का उत्तम साधन है। हिरन की बड़ी प्रजातियों में वयस्क मदकाल व प्रजनन काल के अतिरिक्त अलग झुंड में रहते हैं तथा मादाएँ, बच्चे तथा अवयस्क नर (2 या 3 वर्ष के उम्र के) अलग झुंड बना कर रहते हैं।

मादा झुंड का नेतृत्व करती हैं। मादाएँ आपस में लड़ती नहीं हैं। बच्चे को जन्म देते समय मादा एकान्त में जाकर सुरक्षित स्थान पर बच्चे को जन्म देती है तथा कुछ ही दिन बाद झुण्ड में मिल जाती है। छोटी प्रजातियों जैसे काकड़, कस्तूरा मृग व पाड़े बड़े झुण्ड में नहीं रहते हैं। प्रजनन काल में नर मादा व छोटा बच्चा साथ रहते हैं अन्यथा अलग ही रहते हैं।

उत्तरांचल के तराई-भाबर क्षेत्र व कम ऊँचाई के हिमालय व शिवालिक पहाड़ियों में चीतल, सांभर, पाड़ा व काकड़ पाये जाते हैं। हरिद्वार वन प्रभाग में झिल मिल झील के आस पास बारासिंघा भी पाये जाते हैं। इस क्षेत्र को इसी कारण प्रदेश सरकार ने संरक्षण क्षेत्र (Conservation Reserve) घोषित कर दिया है। यह क्षेत्र 3000 मीटर के आस पास व उससे अधिक ऊँचाई पर सबसे खूबसूरत स्थान है। चीतल 1000 मीटर की ऊँचाई तक सभी जगह मिलता है। यह संख्या में भी सर्वाधिक है। पाड़ा कुछ ही स्थानों पर मात्र घास के मैदानों में पाया जाता है। कार्बेट पार्क में दिकाला में सर्वाधिक संख्या में पाया जाता है। सांभर, उत्तरांचल में पाये जाने वाला सबसे बड़ा हिरन है जो तराई से लेकर 2000 मीटर से भी अधिक ऊँचाई तक मिलता है। शेर का सबसे प्रिय भोजन सांभर है। काकड़ भी 2000 मीटर की ऊँचाई तक पाया जाता है व उत्तरांचल में पाए जाने वाला सबसे छोटा हिरन है।

सबसे पहले भारत में दिखी थी गौरैया

डा० योगेश योगी:- घरों के आस-पास रहने वाली गौरैया का पहला निवास स्थल भारतीय उपमहाद्वीप था। रूस के मॉस्को विश्वविद्यालय में दुनिया भर के प्रख्यात पक्षी वैज्ञानिक शोध के बाद इस निष्कर्ष पर पहुँचे हैं। अभी केवल मिडिल ईस्ट (ईरान के आस-पास) को ही गौरैया का जन्म स्थान माना जाता रहा है। मॉस्को विवि में 15 से 22 सितंबर तक गौरैया के प्रथम निवास को लेकर वैज्ञानिकों ने शोध किया। गुरुकुल कांगड़ी विश्व विद्यालय हरिद्वार के जंतु-पर्यावरण विज्ञान विभाग के प्रोफेसर एंव पक्षी वैज्ञानिक डा० दिनेश भट्ट भारत के प्रतिनिधि के तौर पर इसमें शामिल हुए। प्रो० भट्ट ने बताया कि वहाँ आठ दिन चले मंथन में यह सामने आया कि एग्रीकल्चर सिस्टम के प्रचलन से 10 हजार वर्ष पूर्व गौरैया की दो प्रजातियों का जन्म हुआ था। एक प्रजाति (इंडिकस) का जन्म भारतीय उपमहाद्वीप में और दूसरी (डोमेस्टिकस) का जन्म मिडिल ईस्ट में हुआ था। इन दोनों के मिलन का क्षेत्र कजाकिस्तान बना, जहाँ दोनों पाई जाती हैं। बताया कि मनुष्य के साथ गौरैया का संबंध और उनके जन्म की बात 10 हजार वर्ष के फोसिल रिकॉर्ड (जो मिडिल ईस्ट से मिला) से पुष्टि हुई।

रूस में हुआ भारत से अच्छा काम

प्रो० भट्ट ने बताया कि रूस में गौरैया के संरक्षण पर काफी अच्छा काम हुआ है। भारत में गौरैया की संख्या तेजी से घट रही है, जबकि रूस में गौरैया की संख्या स्थिर है। उन्होंने बताया कि वहाँ नागरिकों में प्रकृति संरक्षण के प्रति बेहद संवेदनशीलता है। जिस कारण गौरैया ओपन रेस्ट्रा में भी दाना पानी चुगते दिख जाती है।

पाई जाती है अधिकतर देशों में

गौरैया विश्व के अधिकतर भू-भाग पर मिलती है। यह पक्षी भारतीय उपमहाद्वीप, यूरोप, मध्य एशिया, उत्तरी अफ्रीका, उत्तरी अमेरिका, ऑस्ट्रेलिया और न्यूजीलैंड में आसानी से देखा जा सकता है। कहा जाता है कि इतना बड़ा भू-भौगोलिक विस्तार शायद ही किसी दूसरे पक्षी का हुआ हो।

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सतत् संरक्षण में वन्यजीव पर्यटन की भूमिका

ए0एस0 नेगी

सभ्यता के विकास के साथ-साथ मनुष्य में पर्यटन या देशाटन का शौक भी बढ़ा है। मानव की यह प्रवृत्ति नई नहीं है। इसी जिज्ञासा के कारण वास्को-डी-गामा ने भारत की खोज की तथा कोलम्बस ने नई दुनियाँ ढूँढ निकाली। मनुष्य बड़े से बड़े जोखिम उठाकर भी दुर्गम व कठिन स्थानों पर जाने के लिए उत्सुक रहता है। इसी प्रवृत्ति के कारण दुनिया की ऊँची से ऊँची चोटी, गहरे से गहरा सागर, उत्तरी तथा दक्षिणी ध्रुव जैसे दुर्गम स्थान, बड़े से बड़े मरुस्थल, घने जंगल आदि मनुष्य की पहुँच से बाहर नहीं रहे। इतना ही नहीं वह इस दुनिया के अतिरिक्त अन्य ग्रहों पर भी पहुँच रहा है। चाँद पर मनुष्य अपनी उपस्थिति अंकित कर चुका है और अन्य ग्रहों पर भी जाने की कोशिश में लगा है। मानव की यह प्रकृति न केवल बनी रहेगी बल्कि यातायात के सुगम व तीव्र साधनों के विकास के साथ बढ़ती रहेगी।

एक समय था जब मनुष्य बिना किसी पूर्व जानकारी के नए-नए स्थलों पर बड़ी कठिनाई से जाता था। अब अधिकांश स्थानों की जानकारी आसानी से बिना उन स्थानों का भ्रमण किए हासिल की जा सकती है। फिर भी हर एक व्यक्ति की यह प्रवृत्ति होती है कि वह स्वयं उन स्थानों पर पहुँचकर नया अनुभव प्राप्त करें। प्रत्येक स्थान की पूर्व जानकारी के कारण पर्यटकों की जिज्ञासा बढ़ना भी स्वाभाविक है।

पर्यटन का उद्देश्य रूचिकर स्थलों पर स्वयं पहुँचकर उसका आनन्द लेने के साथ-साथ वहाँ की सभ्यता, रहन-सहन, संस्कृति (Culture), रीति-रिवाज, प्राकृतिक दृश्यों, वन्यजीवों, मानव द्वारा निर्मित प्रतीकों, आदि का अवलोकन व अध्ययन करना भी है। मात्र धार्मिक भावना से तीर्थ स्थलों की यात्रा करना तीर्थाटन की श्रेणी में आता है। तीर्थाटन भी पर्यटन की भावना से किया जा सकता है।

पर्यटन के प्रकार

पर्यटन के मुख्य उद्देश्य को दृष्टि में रखते हुए पर्यटन निम्न प्रकार के हो सकते हैं :

1. सामान्य पर्यटन (General Tourism)
2. वन्य जीव पर्यटन (Wildlife Tourism or Eco-Tourism)
3. साहसिक पर्यटन (Adventure Tourism)

1. सामान्य पर्यटन :

इसमें पर्यटक बिना किसी विशेष उद्देश्य के हर प्रकार के पर्यटन स्थलों का भ्रमण करता रहता है। ऐतिहासिक महत्व के स्थल, प्राचीन स्मारक, भौगोलिक महत्व के स्थल, धार्मिक स्थान, आधुनिक शहर व इमारतें, वैज्ञानिक चमत्कार वाले स्थान, औद्योगिक महत्व के स्थान, प्राकृतिक सौन्दर्य के लिए प्रसिद्ध स्थल आदि पर विशेष बल दिया जाता है। ऐसे पर्यटकों की संख्या सर्वाधिक होती है और इस प्रकार के पर्यटकों में किसी विशेष स्थान को देखने में अधिक रुचि होती है।

2. वन्यजीव पर्यटन :

यह एक आधुनिक प्रकार का शौक है। इसे इको पर्यटन भी कहते हैं। इसमें पर्यटक राष्ट्रीय उद्यानों, वन्यजीव अभ्यारण्यों, घने वनों आदि का भ्रमण वन्य प्राणियों की जानकारी करने के उद्देश्य से करता है। प्रकृति से विशेष लगाव रहता है तथा अधिक समय तक एक स्थान पर रहना चाहता है। विशेषकर एकांत प्रेमी पर्यटक होते हैं जिनकी रुचि फोटोग्राफी, लिखने-पढ़ने व नई जानकारी प्राप्त करने की होती है। एक पर्यटक बार-बार उन्हीं स्थानों पर जाना चाहता है जो उसे रूचिकर लगता है। ऐसे पर्यटक जागरूक होते हैं तथा प्रकृति संरक्षण (Conservation) में विश्वास करते हैं। इनमें से अनेक पुराने शिकारी भी हो सकते हैं, जिन्हें वनों व अन्य प्राणियों का ज्ञान रहता है। सुख-सुविधाओं

की अधिक परवाह नहीं करते हैं। जो पर्यटक मात्र फैशन से इस प्रकार का पर्यटन अपनाते हैं, उन्हें अच्छा व सही मार्गदर्शन देने पर वे भी अच्छे वन्यजीव पर्यटक बन सकते हैं। राष्ट्रीय उद्यानों व अभ्यारण्यों में आने वाले पर्यटक वन्यजीव पर्यटक नहीं होते हैं। कुछ सामान्य पर्यटक भी जिज्ञासावश एक बार आ जाते हैं।

3. साहसिक पर्यटन :

यह काफी समय से प्रचलित है। इस श्रेणी में पर्वतारोहण, ट्रैकिंग या लम्बी व दुर्गम दूरियों का पैदल चलकर पार करना, लम्बी व दुर्गम यात्राएँ (विभिन्न साधनों से) करना व दुर्गम स्थलों जैसे—घने जंगलों, मरुस्थलों, पहाड़ी प्रान्तों, ऊँची पर्वत चोटियों आदि में जाना होता है। इनकी संख्या अत्यधिक कम होती है परन्तु ये पूर्ण रूप से समर्पित पर्यटक होते हैं। इन्हें भी प्रकृति से प्रेम होता है तथा ये सादा व कठिन जीवन बिता सकते हैं।

वन्यजीव पर्यटन का उद्देश्य

जैसा कि पूर्व स्पष्ट किया जा चुका है, वन्यजीव पर्यटन आधुनिक पर्यटन है। यँ तो काफी समय पूर्व से कुछ गिने चुने लोग इस उद्देश्य से दूर-दूर भ्रमण करते थे परन्तु धीरे-धीरे दुनियाँ भर के लोगों में वन्यप्राणी पर्यटन की और रुचि उभर रही है। विभिन्न प्रकार की जलवायु तथा विभिन्न प्रकार के वनों में विभिन्न प्रकार के वन्यजीव पाये जाते हैं। जितनी भिन्नता संसार भर के वन्यजीवों की है उतनी भिन्नता शायद ही अन्य किसी में हो। टाइगर या शेर केवल एशिया में पाये जाते हैं। चीते केवल अफ्रीका में पाये जाते हैं। कंगारू आस्ट्रेलिया में मिलता है। भारत ही ऐसा देश है जिसमें शेर व बब्बर शेर दोनों पाए जाते हैं। हाथी मात्र एशिया के कुछ देशों (एशियन हाथी) तथा अफ्रीका में (अफ्रीकन हाथी) पाये जाते हैं। अफ्रीका में एन्टीलोप की अनेक प्रजातियाँ होते हुए भी डियर की कोई प्रजाति नहीं पाई जाती है। एक सींग वाला गैण्डा (Great Indian Rhinoceros) केवल भारत व नेपाल में ही पाया जाता है। अफ्रीका में जो अफ्रीकी गैण्डा पाया जाता है वह इससे भिन्न होता है। विभिन्न देशों व जलवायु में विभिन्न प्रकार के वन्यजीवों के पाये जाने के कारण वन्यजीव पर्यटन रुचिकर हो जाता है। यही कारण है कि विभिन्न देशों के वन्यप्राणी पर्यटक अन्य देशों में अपनी जिज्ञासा पूर्ण करने तथा आनन्द प्राप्त करने जाते हैं।

वन्यजीव पर्यटन का उद्देश्य मात्र विभिन्न प्रकार के वन्यजीवों का अवलोकन कराना ही नहीं है वरन् विभिन्न प्रकार के वास स्थलों की जानकारी करना भी है। वर्तमान परिपेक्ष्य में जब वन्यजीवों के वास स्थलों का द्रुत गति से छरण हो रहा है और अनेक वन्यजीवों की प्रजातियाँ विलुप्त होने के कगार पर पहुँच गई है। वन्यजीव पर्यटन का महत्व अधिक हो जाता है। यही एक तरीका है जिससे विश्व भर में वन्यप्राणियों के संरक्षण के लिए जागृति पैदा की जा सकती है। आधुनिक मानव जब प्रौद्योगिकीकरण की होड़ में लगा हो और धन के पीछे भाग रहा हो, तो केवल खूबसूरत वन्यप्राणी ही उसको अपने अस्तित्व का बोध करा सकते हैं। इसी माध्यम से व्यक्ति को संरक्षण (Conservation), पर्यावरण प्रदूषण के खतरों व प्रकृति प्रेम का बोध हो सकता है। इसी से व्यस्त मानव कुछ क्षणों की शांति अर्जित कर सकता है।

वन्यजीव पर्यटन और भारत

वन्यजीव पर्यटन की दृष्टि से भारत सर्वाधिक महत्वपूर्ण देशों में से एक है। भारत विश्व भर में अपनी महान प्राकृतिक विभिन्नता (Mega Biodiversity) के लिए प्रसिद्ध है। समुद्र तल से ऊँचाई स्थलीय संरचना, भूगर्भीय बनावट व जलवायु की विभिन्नता के कारण भारत में अनेक प्रकार की पर्यावरणीय दशायें (Environmental Conditions) उत्पन्न हो जाती हैं जैसे—सदाबहार वन (Tropical Rain Forests), डेल्टा वन (Mangroves), ठंडे व गर्म रेगिस्तान, झाड़ीनुमा वन, शुष्क व नम पर्णपाती वन, बीहड़, (Ravines), मैदान, दलदलीय भूमि (Wetlands), शीतल व ऊँचे हिमालय जैसे स्थान, लम्बा समुद्र तट (Costline), द्वीप समूह (Islands) आदि। दुनियाँ में भारत की स्थिति इस तरह से है कि वह तीन मुख्य जैवभौगोलिक वृहदक्षेत्र (Biogeographical Realms) के

तिराहे पर पड़ता है, अर्थात इन्डो-मलायन, यूरेशियन तथा अफ्रो-ट्रॉपिकल। तीनों Realms की जैविक विविधताओं के मिलने के कारण तथा पर्यावरण स्थिति की विभिन्नता के कारण, भारत की प्राकृतिक सम्पदा न केवल एक गौरव की बात है बल्कि भविष्य के लिए एक अनमोल खजाना भी है। इसी कारण भारत में 500 से अधिक स्तनपाई जीवों की प्रजातियाँ पाई जाती हैं। जिसमें हाथी, इंडियन बाइसन (Greatest of existing Bovine), भारतीय गैण्डा (विश्व भी में सबसे बड़ा गैण्डा), हिमालय की सबसे बड़ी जंगली भेड़, बारहसिंघा, थामिन, सबसे सुन्दर हिरन-चीतल, नीलगाय, चौसिंघा, कालाहिरन, माँसाहारी पशु, जैसे शेर, बब्बर शेर, बादली गुलदार, मारबल कैट, आदि तथा अन्य प्रजातियाँ जैसे हिमालयन फॉक्स, मारटिन, उड़ने वाली बड़ी गिलहरी, कस्तूरा मृग, लिटिल पेन्टेड बैट (दुनियाँ में सबसे रंगीला जीव) पाये जाते हैं। इतना ही नहीं भारत के वनों में एक निराला आकर्षण है जो पर्यटकों को बार-बार अपनी ओर आकर्षित करता है।

विश्व भर में पाई जाने वाली लगभग 8600 पक्षी प्रजातियों में से भारत में लगभग 2400 जातियाँ या उपजातियाँ पाई जाती हैं, जिसमें से लगभग 300 जातियों के पक्षी उत्तरी देशों से जाड़ों (Winter) में यहाँ आते हैं। सारस, मोर, जंगली मुर्गे, ग्रेट इन्डियन बस्टर्ड, हार्न बिल, ट्रेगोपान, मोनाल, चीड फीजेन्ट जैसे खूबसूरत पक्षी भारत में पाये जाते हैं। इसके अलावा भारत में अनेक प्रकार के कीट पतंगे, सरीसृप, एम्फीबियन तथा बहते व खारे पानी की मछलियाँ पाई जाती हैं। स्पोर्ट फिश जैसे महाशीर व ट्राउट भी भारत की अनेक नदियों में पाई जाती हैं जो पर्यटकों को आकर्षित करती हैं।

वर्तमान परिपेक्ष्य में वन्यजीव पर्यटन की भूमिका

चूँकि भारत में उक्त कारणों से विभिन्न प्रकार के वन्यप्राणी पाये जाते हैं और यहाँ की प्राकृतिक विविधता (Biodiversity) विश्व भर में प्रसिद्ध है अतः संसार भर से वन्यप्राणी पर्यटक भारत आते हैं। दुर्भाग्य से अफ्रीका की तरह हम इसे अधिक लोकप्रिय नहीं बना पाये हैं जिस कारण जितने पर्यटक यहाँ आने चाहिए उससे कम आ रहे हैं। हमारे देश में शेर, गुलदार, हाथी आदि की अधिकांश वनों में उपस्थिति के कारण वन्यप्राणी पर्यटन अफ्रीका से काफी कौतुहलपूर्ण है। सुन्दर वनों व उनके वन्य प्राणियों की विविधता के कारण हम विश्व में सर्वाधिक वन्यप्राणी पर्यटकों को आकर्षित कर सकते हैं। इसमें न केवल विदेशी मुद्रा अर्जित करने के लिए यह एक प्रमुख साधन हो सकता है बल्कि वन्यप्राणी संरक्षण के प्रति विश्व भर में जागृति भी पैदा की जा सकती है। वन्यप्राणी पर्यटन न केवल राष्ट्रीय उद्यानों में ही प्रोत्साहित किया जाना चाहिए बल्कि इससे भी अधिक अन्य आरक्षित वनों व अभ्यारण्यों में इसे प्रोत्साहित करने की आवश्यकता है तभी पर्यटक जगरुकता के माध्यम से इस अमूल्य धरोहर की रक्षा भी कर सकेंगे।

वन्यजीव पर्यटन को लोकप्रिय बनाने के लिए गाइड की भूमिका

आज हमारे वनों, राष्ट्रीय उद्यानों तथा अभ्यारण्यों में अनेक पर्यटक आते हैं और बिना उनके सम्बन्ध में पूर्ण जानकारी लिये तथा बिना पूर्ण आनन्द लिए ही वापस चले जाते हैं। पर्यटक हमें, उनमें वन्यप्राणियों के प्रति जागृति लाने व उनका ज्ञान अर्जित करने का अवसर प्रदान करते हैं परन्तु हम उस अवसर का लाभ नहीं उठा पाते हैं। फलस्वरूप केवल बिना ज्ञान अर्जित किये वापस जाता है बल्कि वह एक गलत धारणा का शिकार भी हो जाता है कि वनों में शेर या अन्य बड़े जानवर किसी कारणवश न दिखाई दिये हैं तो वह सोचता है कि इनमें कुछ हैं भी या नहीं। अधिकांश पर्यटक शहरों से आते हैं और उन्हें जंगलों व जंगली जानवरों के बारे में मौलिक जानकारी भी नहीं होती है। वन विभाग के पास जो कर्मचारी, गाइड के रूप में हैं, उनकी संख्या अत्यन्त कम है तथा उन्हें भी पूर्ण प्रशिक्षण प्राप्त नहीं है। अतः यह नितान्त आवश्यक है कि पर्यटकों को वन्यप्राणियों के अवलोकन के लिए प्रशिक्षित व दिलचस्प गाइड की सेवायें प्राप्त हों। गाइड, पर्यटकों को वनों, पेड़-पौधों, जंगली जानवरों, प्राकृतिक स्थलों (Natural Features) पक्षियों, आसपास की जनजातियों तथा ग्रामीणों आदि के बारे में सही व दिलचस्प जानकारी देकर उनके पर्यटन को शिक्षाप्रद, आकर्षक, दिलचस्प व कौतुहलपूर्ण (Thrilling) बना सकता है। गाइड का मुख्य कार्य प्रकृति का सही रूप से चित्रण (Interpretation) करना है। प्रकृति चित्रण के लिए कुछ विषयों की न्यूनतम जानकारी देना तथा इससे उनकी रुचि प्रकृति तथा

संरक्षण (Conservation) की ओर ढालना है। यह उन्हें इस विषय की दीक्षा देना मात्र (Initiation), बाकी व अभ्यास रूपी साधना से स्वयं अनुभव प्राप्त कर सकेंगे। उन्हें उन पुस्तकों की जानकारी भी प्रशिक्षण के दौरान हो जायेगी जिससे व अपना ज्ञान आगे बढ़ा सकते हैं। उन्हें उन संगठनों व प्रशिक्षण केन्द्रों की भूमिका का भी ज्ञान दिया जाना चाहिए जो इस ओर कार्य कर रहे हैं। गाइड को न केवल प्रकृति चित्रण व वन्यप्राणियों की आदतों का ज्ञान अर्जित करना काफी है बल्कि उसे पंच इन्द्रियों को भी इस ओर ढालना होगा। अपनी इन्द्रियों को इतना संवेदनशील (Sensitive) बनाना होगा कि जंगल में प्रत्येक आवाज, उसकी इन्द्रियों को प्रभावित किये बिना न रहे। हो सकता है कि प्राकृतिक परिस्थितियों में लम्बे समय तक कुछ दिखाई-सुनाई न दे परन्तु हिम्मत नहीं हारनी है। जंगल का अधिकतम ज्ञान जंगल में रहकर ही प्राप्त हो सकता है। कहते हैं कि छठी इन्द्री (Sixth Sence) अत्यधिक जागृत थी और उन्हें जंगल में होने वाले हर क्रिया-कलाप का आभास हो जाता था। यह तभी सम्भव हुआ जब उन्होंने जंगलों में लम्बे रास्ते तय किये, कई दिन-रातें गुजारी और अपनी इन्द्रियों को इस काबिल बनाया। जंगलों की अपनी भाषा है, जानवरों के अपने तौर तरीके हैं, जितना अनुभव मिलेगा उतनी ही दिचस्पी बढ़ती जायेगी।

गाइड को अपना कोई शौक (Hobby) भी पालना आवश्यक होता है, जैसे फोटोग्राफी, वन्यप्राणियों की पुस्तकों का पठन-पाठन, पक्षी निहारना (Bird watching) आदि। अपने पैसे को सुदृढ बनाने के लिए कोई न कोई शौक अवश्य होना चाहिए।

गाइड को जितना अधिक ज्ञान होगा वह पर्यटक के लिए उतना ही अधिक उपयोगी होगा। गाइड की एक अहम् भूमिका सामान्य पर्यटकों को प्रकृति संरक्षण की ओर ढालना भी हो सकता है। वह अपने अनुभव व ज्ञान से साधारण पर्यटकों में प्रकृति प्रेम जगा सकता है तथा उपभोक्तावाद (Consumerism) को कम कर सकता है। उदाहरण के लिए वह पर्यटकों को यह याद दिला सकता है कि पेड़ों से बनने वाले कागज का वह किस लापरवाही से प्रयोग करके जंगलों के विनाश में हाथ बंटा रहा है। छोटी-छोटी असावधानियों से कैसे प्रकृतिक खजानों पर चोट कर रहा है। बच्चों पर इस तरह की जानकारी का गहरा असर पड़ सकता है और वे अपनी जीवन शैली (Live Style) इको-फ्रैण्डली बना सकते हैं।

वनों व वन्यजीवों का संरक्षण मात्र सरकारी प्रयासों से अब सम्भव नहीं रह गया है। वनों को आग से बचाना हो या नाजायज शिकार और नाजायज कटान की रोकथाम करना हो अथवा चराई, शाख तरासी या अन्य प्रकार से वनों को पहुँचने वाली क्षति को नियंत्रित करना हो, बिना जनसहयोग के कुछ भी सम्भव नहीं हैं। जनसहयोग प्राप्त करने के लिए यह आवश्यक है कि आस पास के ग्रामीणों को वनों से जीविकोपार्जन का स्थायी साधन मिले जिससे वनों को क्षति भी न पहुँचे और ग्रामीण वनों के अप्रत्यक्ष लाभों के प्रति सजग भी हों। वन्यजीव पर्यटन तथा इको पर्यटन ऐसा स्थायी साधन है जिसको यदि पूर्णरूप से नियंत्रित किया जाये तो ग्रामीणों का सतत् रूप से रोजगार भी मिलेगा और अपने रोजगार को बरकरार रखने के लिए ग्रामीण भी वनों व वन्यजीवों का सतत् रूप से संरक्षण सुनिश्चित करेंगे। इस प्रकार के पर्यटन से ग्रामीणों का मार्ग दर्शन करने के साथ उनके लिए रहने, खाने व अन्य सुविधायें उपलब्ध कराने का अवसर मिलेगा तथा आवागमन हेतु आवश्यक साधन भी ग्रामीण विकसित करेंगे। पर्यटकों को सांस्कृतिक कार्यक्रम, स्थानीय उत्पाद, स्थानीय हस्तकला से बनी वस्तुएं आदि उपलब्ध कराकर भी आय के अतिरिक्त साधन उपलब्ध होंगे। यदि ग्रामीणों को वन्यजीव पर्यटन से मिलने वाले उक्त लाभों का सिलसिला शुरू हो गया तो कोई वजह नहीं कि ग्रामीण उस संसाधन की सतत् रूप से रक्षा न करें जिसके कारण उनको जीविकोपार्जन प्राप्त हो रहा है। ग्रामीणों का धीरे-धीरे अपने आस-पास के वनों एवं वन्यजीवों से गहरा सम्बन्ध स्थापित हो जायेगा। साथ ही आने वाले पर्यटक भी संरक्षण के प्रति जागरूक होंगे जो अंततोगत्वा जैव विविधता संरक्षण में सहायक होगा।

इको-टूरिज्म, वन्यजीव पर्यटन की समस्याएँ व भावी सम्भावनाएँ

आनन्द सिंह नेगी

इको-टूरिज्म का आशय:

इसके अन्तर्गत प्राकृतिक दृश्यों के अवलोकनार्थ किया गया भ्रमण, साहसिक भ्रमण तथा वन्य जन्तुओं व वनस्पतियों को उनके प्राकृतिक वास स्थल में अवलोकन हेतु किया गया भ्रमण सम्मिलित है। दुर्गम व बीहड़ प्राकृतिक स्थलों का भ्रमण, उनकी जैव विविधता को निहारने तथा वहाँ के सांस्कृतिक परिवेश का अध्ययन करने के लिए किया जाता है। वर्तमान समय में इको-टूरिज्म शब्द का प्रयोग संरक्षित क्षेत्रों जैसे – राष्ट्रीय उद्यानों तथा पशु विहारों का भ्रमण करने वाले सैलानियों के संदर्भ में किया जाता है। प्राचीन समय से ही भ्रमण मुख्यतः आनन्द लेने के लिए किया जाता रहा है तथा भ्रमणकारी स्वतंत्र रहकर विचरण करना पसन्द करता है। परन्तु जब इको-टूरिस्ट की बात की जाय तो हमारे दिमाग में भ्रमण करने वाले की जो छवि बनती है वह ऐसा व्यक्ति है जो आनन्द के साथ-साथ कुछ जानकारी करना भी चाहता है तथा जो अपने भ्रमण से उस क्षेत्र विशेष के समाज तथा पर्यावरण पर पड़ने वाले प्रभाव के बारे में भी जागरूक है। ऐसा पर्यटक प्रायः भ्रमण के दौरान आने वाले परेशानियों को खुशी से झेलना पसन्द करेगा तथा साधारण परिस्थितियों व सुविधाओं से सन्तुष्ट होगा। पर्यटक को साहसी व उत्साही होना भी आवश्यक है। इतना ही नहीं पर्यटक को प्राकृतिक संरक्षण में अपना सहयोग देने के लिए भी तत्पर रहना चाहिए। पर्यटन के बाद वापस लौटने पर पर्यटक को संरक्षण के आपसी सम्बन्ध का ज्ञान हो जाना चाहिए। पर्यटन के बाद वापस लौटने पर पर्यटक को उपभोक्तृवाद तथा प्राकृतिक पर्यटक से प्रकृति प्रेमी बनने की आशा की जा सकती है।

इको-टूरिज्म के अवसर तथा प्रयत्न:

भारत प्राकृतिक विविधता का देश है जिसमें अनेक प्रकार की जलवायु व वास स्थलों में अनेक प्रकार की वनस्पति व जीवजन्तु पाए जाते हैं। भारत से अधिक जैव विविधता संभवतः केवल कुछ अफ्रीकी देशों में ही मिलेगी। साथ ही हमारे देश में इस जैव विविधता को बचाने के भी अनेक प्रयास किये जा रहे हैं। हमारे देश में सन् 1970 की मात्र 10 राष्ट्रीय उद्यान एवं 127 अभयारण्य थे जिनके अन्तर्गत मात्र 25000 वर्ग कि०मी० क्षेत्र था। सन् 1991 तक यह क्षेत्रफल बढ़कर 1,32,000 वर्ग कि०मी० हो गया था जिसके अन्तर्गत 66 राष्ट्रीय उद्यान व 421 पशु विहार सम्मिलित थे। वर्तमान में हमारे देश में संरक्षित क्षेत्रों (जिनमें संरक्षित आरक्षण तथा कम्यूनिटी आरक्षण भी सम्मिलित हैं) की संख्या 658 हो गई है जिनके अन्तर्गत कुल 158745 वर्ग कि०मी० क्षेत्र है। सरकार इन संरक्षित क्षेत्रों को बढ़ाने के लिए प्रयत्नशील है तथा उसका लक्ष्य देश के भौगोलिक क्षेत्रफल का 5.6 प्रतिशत क्षेत्र अर्थात् 1.83,000 वर्ग कि०मी० क्षेत्र इसके अन्तर्गत लाने का है जिसमें लगभग 147 राष्ट्रीय उद्यान एवं 633 पशु विहार होंगे।

देश की अपार प्राकृतिक सम्पदा एवं सांस्कृतिक आकर्षणों के बावजूद हमारे यहाँ विश्व के पर्यटकों का मात्र 0.31 प्रतिशत पर्यटक ही पहुँच पाता है। वन्यजीव एवं संरक्षित क्षेत्र उक्त का मात्र एक छोटा अंश ही आकर्षित कर पाते हैं। इसका मुख्य कारण साधनों की कमी, दंगे-फसाद व समय-समय पर होने वाली गड़बड़ियाँ तथा प्रचार-प्रसार की कमी है। सरकारी तंत्र के विभिन्न स्तरों पर होने वाले विलम्ब भी इसके लिए जिम्मेदार ठहराए जा सकते हैं।

कठिनाईयाँ :

लगातार बढ़ती हुई जनसंख्या एवं पालतू पशुओं का जो दबाव हमारे संरक्षित क्षेत्र पर पड़ रहा है उससे हमारे संरक्षित क्षेत्र प्राकृतिक साधनों के छोटे-छोटे द्वीप मात्र बनकर रह गए हैं जो चारों तरफ से लालची निगाहों से घिरे हैं। वैधानिक रोक-टोक के कारण आसपास की जनता, जो इन क्षेत्रों से

अपनी दैनिक आवश्यकताओं की पूर्ति करती रही उस पर इन क्षेत्रों में जाने पर पाबन्दी लग गई है। इन स्थानीय लोगों के मन में प्राकृतिक संरक्षण की बात बिठाना असंभव हो जाता है। विशेषकर जब वे बाहरी सैलानियों को बिना रोक टोक के इन क्षेत्रों में आनन्द के लिए घूमते हुए देखते हैं। इससे संरक्षित क्षेत्रों के प्रबन्धकों व स्थानीय जनता में टकराव की स्थिति उत्पन्न हो जाती है। अतः यदि इन जैव विविधता युक्त संरक्षित क्षेत्रों को बचाया जाना है तो टकराव के क्षेत्रों को कम करना होगा तथा पर्यटन की ऐसी नीति बनानी होगी जिससे स्थानीय जनता को पर्यटन से होने वाले लाभ में भी उचित हिस्सा मिल सके। स्थानीय जनता की नाराजगी से इन क्षेत्रों को इतनी क्षति हो सकती है जितनी पर्यटन के कुप्रबन्ध से कभी नहीं होगी। इसलिए किसी भी संरक्षित क्षेत्र की पर्यटन नीति व योजना में स्थानीय जनता की आवश्यकताओं का ऐसा समावेश होना चाहिए ताकि क्षेत्र के संरक्षण को सर्वाधिक महत्व मिल सके। ध्येय यह होना चाहिए कि जनता में संरक्षण के प्रति जागरूकता उत्पन्न हो तथा संरक्षित क्षेत्रों के लिए जनता का अधिकाधिक सहयोग प्राप्त किया जा सके। इस उद्देश्य की पूर्ति हेतु निम्न प्रयास किया जा सकते हैं।

1. बैंक पैक पर्यटक और मध्यम व निचली आय सीमा के पर्यटकों के लिए भोजन व आवास की व्यवस्था हेतु स्थानीय लोगों की सहकारी संस्थाओं की स्थापना करना तथा इच्छुक व्यक्तियों को 'होम स्टे' के लिए प्रोत्साहित करना तथा प्रारम्भ में उन्हें इस हेतु अनुदान व सस्ते ऋण की व्यवस्था करना।
2. स्थानीय शिक्षित बेरोजगार युवकों को प्रकृति गाईड का प्रशिक्षण प्रदान करना तथा उन्हें पर्यटकों के साथ गाईड के रूप में उपयोग में लाना।
3. स्थानीय हस्तकला व स्थानीय वस्तुओं की बिक्री के लिए सहकारिता संस्थाएं बनाकर स्थानीय लोगों की आय के साधनों में वृद्धि करना।
4. स्थानीय लोक गीतों व लोक नृत्यों से पर्यटकों का मनोरंजन करके अतिरिक्त आय के साधन तैयार करना।
5. स्थानीय स्कूल/कालेज के विद्यार्थियों तथा स्वयंसेवी संस्थाओं को संरक्षित क्षेत्र के प्रकृति चित्रण (Interpretation) कार्यों से सम्बद्ध करना।
6. संरक्षित क्षेत्र के आस-पास के गांवों में इको-डेवलपमेंट कार्य करना जैसे - भूमि संरक्षण, पौध रोपण, सौर ऊर्जा के साधन उपलब्ध कराना, चारागाह विकास, फलोद्यान, रेशम उद्योग, मधुमक्खी पालन, मशरूम उगाना, स्थानीय हस्तकला को प्रोत्साहन देना, मछली पालन, पशुपालन, लघु सिंचाई, बच्चों व महिलाओं के लिए आवश्यक स्वास्थ्य सेवायें, पशुओं के लिए चिकित्सा, मुर्गी पालन आदि। यह कार्य स्थानीय आवश्यकताओं के अनुसार किए जा सकते हैं। यह कार्य पार्क प्रबन्धकों तथा सरकारी विभागों द्वारा ही नहीं बल्कि स्वयंसेवी संस्थाओं, स्थानीय पर्यटक रिजोर्ट्स आदि के द्वारा भी किए जाने चाहिए।
7. किसी संरक्षित क्षेत्र में इको-टूरिज्म से जो धनराशि पार्क प्रबन्धकों द्वारा अर्जित की जाय उसका अधिकांश भाग इको-डेवलपमेंट में व्यय किया जाये। वर्तमान समय में इको-टूरिज्म से अर्जित धन का उस क्षेत्र के लिए प्राविधानित बजट से कोई सम्बन्ध नहीं है। प्राइवेट टूरिस्ट रिजोर्ट्स (Tourist resorts) तथा अन्य टूर प्रमोटरों (Tour Operators) से 5 से 10 प्रतिशत कर लेकर उक्त कार्यों पर खर्च किया जाना भी उचित होगा।
8. आस पास के ऐतिहासिक, सांस्कृतिक, धार्मिक, प्राकृतिक स्थलों को प्रोत्साहित करना तथा उन्हें इको-पर्यटन से जोड़ना ताकि स्थानीय लोगों को अधिक से अधिक लाभ मिल सके।

इको-टूरिज्म में किन बातों पर विशेष ध्यान दिया जाय:

साधारण पर्यटन एवं इको-टूरिज्म में मुख्य अन्तर यह है कि इको-टूरिज्म द्वारा जिन क्षेत्रों का भ्रमण किया जाता है वे अत्यन्त संवेदनशील हैं तथा उन क्षेत्रों का संरक्षण इसलिए किया जाता है ताकि जो जैव-विविधता (biodiversity) करोड़ों वर्षों में उत्पन्न होकर वर्तमान स्वरूप में पहुंची है उसको

हमेशा के लिए बनाए रखने का प्रयास किया जाय। इन क्षेत्रों में न केवल बड़े जानवर जैसे — हाथी, शेर, भालू, गैंडे, बाइसन आदि वास करते हैं बल्कि छोटे-छोटे जानवर, चिड़ियाँ, कीड़े-मकोड़े तथा अनेक पेड़ पौधों के भी आवास यही है। इसके अलावा यह क्षेत्र आस पास की आबादी, विशेषकर भारत के 6 करोड़ से अधिक आदिवासियों की अनेक आवश्यकताओं जैसे — पानी, चारा, जलौनी लकड़ी, भोजन व रेशम आदि की भी पूर्ति करते हैं। अतः इको-टूरिस्ट को इन क्षेत्रों से पूर्णतः भिन्न होकर जाना चाहिए तथा इस विषय में हमेशा के लिए संवेदनशील हो जाना चाहिए।

आम पर्यटकों को मात्र बड़े जंगली जानवरों जैसे हाथी, शेर, गैंडा, बाइसन आदि देखने की ललक रहती है जिससे वे अन्य इतनी ही महत्वपूर्ण जीव जन्तुओं जैसे हिरन, चिड़ियाँ, कीड़े-मकोड़ों, तितलियाँ, सरीसृप, पानी के जन्तु तथा अनेक प्रकार की वनस्पति पर ध्यान नहीं दे पाते हैं। प्रकृति को इसके विभिन्न रंग-रूप में देखना उतना ही दिलचस्प व कौतूहलपूर्ण है जितना किसी बड़े जंगली जानवरों को देखना। पेड़-पौधों की जातियाँ व उपजातियाँ, पौधों का (succession) विशालकाय वृक्ष, घने जंगल, पत्तियों व फूलों के बदलते रंग रूप, स्वच्छ आकाश में रात्रि को अनेक तारे, चिड़ियों की चहचहायट, जानवरों की अलार्मकाल, रात्रि में सुनाई देने वाली बोलियाँ, नदियों की कलकलाहट, रंग-बिरंगे कीड़े-मकोड़े, तितलियाँ, जानवरों के निशान, दीमक की कारस्तानियाँ आदि-आदि किसी के भी मन में अविस्मरणीय छाप छोड़ती है।

संरक्षित क्षेत्रों में विभिन्न वनस्पतियों व जीव-जन्तुओं के विलक्षण सामान्यस्य को समझने तथा विभिन्न कौतूहलपूर्ण क्षणों का आनन्द लेने के लिए यह आवश्यक है कि पक्षी अपने आचार-व्यवहार को भी तदनुसार परिमार्जित करे। इन क्षेत्रों में किसी भी क्षण पिकनिक के रूप में नहीं मनाया चाहिए। पर्यटक की ओर से थोड़ी लापरवाही तथा आलस्य उसे ऐसे अनुभवों से वंचित कर सकते हैं जो जीवन पर्यन्त दोबारा प्राप्त करना असम्भव है। इन्हीं सब बातों को ध्यान में रखते हुए संरक्षित क्षेत्रों में भ्रमण हेतु कुछ भिन्न कानून बनाए जाते हैं तथा अनेक रोक-टोक लगाई जाती है जिनका आदर करना चाहिए। पर्यटकों की संख्या पर भी इसीलिए नियंत्रण रखा जाता है। एक सच्चा इको-टूरिस्ट इन नियम-कानूनों व रोक-टोकों का सादर पालन करना चाहेगा ताकि प्रकृति संरक्षण को योगदान मिल सके।

इको-टूरिज्म की भारत में संभावनाएँ:

हमारे देश की जैव विविधता, संस्कृति, धार्मिक व ऐतिहासिक स्थल व प्राकृतिक सौन्दर्य को देखते हुए यहां इको पर्यटन की अपार संभावनाएँ हैं। हिमालय, पूर्वोत्तर क्षेत्र मरुस्थल, तटलाइन, पठार, सुन्दर द्वीप, बड़ी-बड़ी नदियाँ, घने वन व भांति-भांति के जीव जन्तु व वनस्पतियाँ सहज की पर्यटकों को अपनी ओर आकर्षित कर जाते हैं। साहसिक पर्यटन जैसे पर्वतारोहण, रिवर राफ्टिंग, रॉक क्लाइम्बिंग, स्नो स्पोर्ट, हाइकिंग आदि की भी अपार संभावनाएँ हैं। विदेशी पर्यटकों को भी उक्त आकर्षण यहां आने के लिए विवश करता है। शहरों की व्यस्त व उबाऊ जिन्दगी से कुछ समय के लिए छुटकारा पाने की ललक भी शहरी लोगों को इको-पर्यटन की ओर प्रवृत्त कर रही है। जैव विविधता, प्राकृतिक सौन्दर्य, ग्लोबल वार्मिंग आदि विषयों में दिन प्रतिदिन जागरूकता बढ़ रही है और पढ़ा लिखा व्यक्ति अधिकाधिक प्रकृति की ओर उन्मुक्त हो रहा है। पर्यावरण के प्रति भी युवाओं, विशेषकर विद्यार्थियों की रुचि व ज्ञान बढ़ रहा है। अतः इन अवसरों का लाभ उठाते हुए केन्द्र व राज्य सरकारों तथा प्राइवेट संस्थाओं को प्रकृति से सामंजस्य बनाए रखते हुए अधिक से अधिक सुविधाओं और मूलभूत ढांचों का विकास करना चाहिए। साथ ही वन विभाग, पर्यटन विभाग तथा संरक्षित क्षेत्र के प्रबन्धकों को, आम जनता को इस दिशा में जागरूक करना चाहिए और अपने व्यवहार व आचरण को भी इको पर्यटन को बढ़ावा देने वाला व दोस्ती भरा व सुविधाजनक बनाना चाहिए।

नाजायज शिकारियों के तौर तरीकों के सम्बन्ध में कुछ महत्वपूर्ण जानकारियाँ

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चन्द असामाजिक तत्वों द्वारा अपने कुत्सित कृत्यों से प्रकृति के अनेक जीव जन्तुओं के अस्तित्व को खतरे में डाला जा सकता है। आम आदमी की इस ओर उदासीनता और अज्ञानता से इन तत्वों को निर्बाध रूप से ऐसा करते रहने का साहस मिलता है, जिसका प्रतिफल होता है प्राकृतिक असन्तुलन। किसी भी प्रजाति के लुप्त होने का अर्थ है उस पर आधारित 10 से 20 वन्य जीव या वनस्पति प्रजातियों का लोप होना। यहाँ कुछ ऐसी जानकारियाँ दी जा रही हैं, जो वन कर्मचारियों व वन्य जीवों की रक्षा में लिप्त कर्मियों के लिए तो महत्वपूर्ण हैं ही, साथ ही आम आदमी के लिए भी महत्वपूर्ण हैं क्योंकि हम थोड़ा प्रयास कर इन प्रकृति व देश के दुश्मनों को पकड़वाने में मदद कर सकते हैं।

1. देश में मुख्यतः दो जनजातियाँ नाजायज शिकार के लिए जिम्मेदार मानी जाती हैं। बावरिया – मुख्यतः उत्तर भारत में सक्रिय है।

बहेलिया – मुख्यतः मध्य व दक्षिण भारत में सक्रिय है।

- कटनी (मध्य प्रदेश) में लगभग हर वर्ष बहेलियों का सालाना सम्मेलन होता है, जिसमें मुख्यतः नाजायज शिकार के नए तौर तरीकों की जानकारी दी जाती है तथा वन विभाग, पुलिस तथा अन्य सरकारी विभाग से कतिपय राज्यों में होने वाले खतरों से सभी को आगाह किया जाता है। उनके निशाने पर जो जंगली जानवर रहते हैं वे जहाँ कहीं भी पाए जाते हैं, क्षेत्रों में वन विभाग द्वारा क्या सतर्कता बरती जा रही है और कहाँ गश्त या निगरानी में कमी या लापरवाही है, उसका भी उन्हें पूर्ण ज्ञान रहता है, जिसको वे आपस में एक-दूसरे से बाँटते हैं।
- अब बहेलियों का रूख भी उत्तराखण्ड या उत्तर भारत के अन्य राज्यों में होने लगा है।
- 'वाइल्डलाईफ प्रोटेक्शन सोसाइटी ऑफ इंडिया' द्वारा उक्त जातियों के कुख्यात शिकारियों को सूचीबद्ध किया गया है, जिसमें 260 व्यक्ति बावरिया जाति के तथा 200 व्यक्ति बहेलिया जाति के हैं।
- इनके पास बन्दूकें भी मौजूद हो सकती हैं।
- पत्र/मालवाहक (कोरियर) का कार्य उक्त जातियों की महिलाओं द्वारा किया जाता है। जानवरों की खाल या अन्य चीजें अपने बदन पर लपेटकर ऊपर से धोती पहनती हैं।
- उक्त नाजायज शिकारी ध्यानपूर्वक विभिन्न वन क्षेत्रों में होने वाली गश्त पर निगरानी रखते हैं और अगर गश्त बन्द हो या लापरवाही से हो रही हो तो उसका फायदा उठाते हैं। रात्रि को भी वनों में अपने काम को अंजाम देते हैं। अतः रात्रि गश्त अति महत्वपूर्ण है।
- गुलदार आदि को मारने के लिए स्प्रिंग ट्रैप (चूहेदानी जैसा बड़ा फंदा) का प्रयोग करते हैं जिनका निर्माण मुख्यतया हरियाणा में किया जाता है।
- जब स्प्रिंग ट्रैप जंगल में लगाते हैं, तो उसको एक एन्कर/लोहे की मोटी चेन के पीछे एक छोटी छड़) द्वारा मजबूती से बाँधा जाता है। एन्कर को जमीन में दबा देते हैं। अक्सर एन्कर को जंगल में ही गड़ा हुआ छोड़ देते हैं और ट्रैप को काम करने के बाद उठा ले जाते हैं।
- जानवर के फंदे में फंसने पर उसकी खाल उसी वक्त निकाल देते हैं, जब तक जानवर का शरीर गर्म रहे ताकि खाल पर मांस के अवशेष नहीं के बराबर रहें।
- फंदे में फंसे बड़े जानवर को मारने के लिए बन्दूक का प्रयोग भी कर सकते हैं।
- अगर जंगल में कभी भी गश्त के समय या कैम्प करते हुए किसी जानवर के चिल्लाने की आवाज

आती है तो तुरन्त उस दिशा में जाकर जाँच पड़ताल करनी चाहिए। चूँकि जानवर फंदे में फंसा हो सकता है।

13. गश्त के समय बावरिया या बहेलया लोगों के बारे में जानकारी करें व उनके कैम्प कहाँ हैं, उसकी पूरी छानबीन करें। ये लोग जब किसी ग्राम सीमा में कैम्प करते हैं तो ग्राम रजिस्टर में उनका हवाला दर्ज किया जाता है, उसकी भी जाँच करें व रजिस्टर में दर्ज करने के लिए भी दबाव डालें। उनके पास यदि असलहे (Fire Arms) हैं तो उनके लाइसेंस की भी जाँच करें।
14. अजनबी लोगों के पास खाल निकालने के औजार या (Jaw trap) फंदे के पुर्जे आदि हों तो तुरन्त सतर्क हो जाना चाहिए और गहन छानबीन करनी चाहिए। ऐसे औजार व पुर्जे अक्सर गंदे कपड़े की पोटली में छिपाए रहते हैं।
15. शेर व गुलदार के नाखून अक्सर कुमकुम की डिबिया में छिपाए रखते हैं।
16. जानवरों को गर्मी के मौसम में पानी के छोटे-छोटे तालाबों में जहर देकर भी मारते हैं। ऐसे पानी के स्रोतों के आस-पास जानवरों की पगडंडियों को झाड़ू झाँकार से बन्द किया जाता है और केवल एक ही रास्ता जो पानी की तरफ जाता है, खुला रखा जाता है। गश्त के समय इस ओर ध्यान देना चाहिए तथा पानी की पी0एच0 की जाँच लिटमस पेपर से करनी चाहिए। पानी में यूरिया मिलान जानवरों के लिए धातक हो सकता है। सात (7) या इससे अधिक पी0एच0 धातक है। ऐसी दशा में लिटमस पेपर को ऐसे पानी में भिगोने पर उसका रंग गहरा हरा हो जाएगा।
17. नाजायज शिकारी अपने पास बोरिक पाउडर भी रखते हैं। अतः मिलने पर सतर्क हो जायें।
18. इनके पास लाल या पीले निशान की शीशी भी हो सकती है, जिस पर MONOCROTOPHOS लिखा होगा। यह भी जहर है जो जानवरों को मारने में प्रयोग होता है।
19. जानवरों को बिजली के झटके से भी मारा जाता है। गश्त के समय यह भी देखना चाहिए कि बिजली की लाइन अधिक नीचे तो नहीं झुकी है, या उस पर जंगल के अन्दर या इर्द-गिर्द कटिया तो नहीं डाली गई है। बिजली के झटके से मरने वाले जानवर के शव परीक्षण पर हृदय में एक बड़ा खून का थक्का मिलेगा। जानवरों को बाहरी हिस्से पर जले का निशान हो सकता है और अन्दरूनी महत्वपूर्ण अंगों पर सुई की नोक के बराबर छोटे-छोटे खून के थक्के नजर आयेंगे।
20. पूरे देश में बाघ (Tiger) का शिकार, 1972 में प्रतिबन्धित कर दिया गया था। भारत में बाघ की हड्डियों का नाजायज व्यापार सर्वप्रथम उत्तर प्रदेश के दुधवा राष्ट्रीय उद्यान में वर्ष 1986 में पकड़ा गया था। बाघ के नाजायज शिकार में संलिप्त कटनी शहर (मध्य प्रदेश) के गैंग में 262 व्यक्तियों की जानकारी मिली है। इसी तरह समल्लखा गैंग में भी 100 व्यक्तियों की जानकारी है।
21. नाजायज शिकार के मामले जब न्यायालय में भेजे जाते हैं तो वन्य जीव संरक्षण अधिनियम की धारा-2 का भी केस में उल्लेख करना आवश्यक है, जिसमें परिभाषाएँ दी गई हैं। जफती की कार्यवाही के समय मुल्जिमों के बयान में यह भी दर्ज करना आवश्यक है कि उनके पास अमुक वस्तु का Ownership Certificate है या नहीं।

महत्वपूर्ण

उपरोक्त सावधानियाँ / जानकारीयाँ गश्त के समय अति महत्वपूर्ण हैं। गश्त का कोई विकल्प नहीं है। जंगली जानवरों का अन्धाधुन्ध शिकार दिन-प्रतिदिन हमारी नाक के नीचे हो रहा है, परन्तु छोटी-छोटी सावधानियाँ / जानकारीयाँ के अभाव में और गश्त में लापरवाही के कारण वन कर्मचारी चूक जाते हैं। छोटे जानवर जैसे जंगली बिल्लियाँ, सियार, नेवले, साँप, कछुए, खरगोश, छिपकलियाँ, सिवेट, सल्लू साँप (Pangolin), चिड़ियाँ, तितली आदि प्रकृति के सन्तुलन बनाए रखने के लिए अति आवश्यक हैं। परन्तु अन्धविश्वास पर आधारित दवाओं, टोटकों आदि के लिए चन्द लोगों द्वारा इनको मारकर सन्तुलन बिगाड़ा जा रहा है। अतः विशेष सतर्कता, सावधानी कर्तव्यपरायणता की आवश्यकता है, तभी प्राकृतिक सन्तुलन को ध्वस्त करने के इन कुत्सित कृत्यों पर लगाम लग सकेगी।

परिन्दों के दिमाग में छिपा है कोमा का तोड़

जागरण संवाददाता (हरिद्वार) : पक्षियों के मस्तिष्क की क्षतिग्रस्त कोशिकाओं को पुनर्जीवित करने वाले के तत्व का पता चलने से कोमा में जाने वाले इंसान को प्राण दान मिल सकता है। विश्वभर के पक्षी विशेषज्ञ उस तत्व की तलाश में जुटे हैं। इस विषय में शोध पर विशेषज्ञ तथ्यों के करीब पहुंच चुके हैं। सफलता मिलती है तो चिकित्सा के क्षेत्र में बड़ी उपलब्धि होगी।

गुरुकुल कांगड़ी विवि में राष्ट्रीय पक्षी विज्ञान सेमिनार में भाग लेने के लिए पहुंचे विश्व के प्रसिद्ध न्यूरोबायोलॉजिस्ट प्रो. हंस विसफ व प्रो. मोनिका सदानंद ने दैनिक जागरण से खास बातचीत की। इन पक्षी विशेषज्ञों ने बताया कि पक्षियों के मस्तिष्क में जैविक घड़ी होती है। जो पक्षियों की दिनचर्या को नियंत्रित करता है। पक्षी वैज्ञानिक इस बात का शोध करने में लगे हुए हैं कि पक्षियों के दिमाग की क्षतिग्रस्त कोशिका कैसे पुनर्जीवित होती है। जबकि, पक्षियों के अलावा किसी और प्राणी के मस्तिष्क की कोशिका एक बार क्षतिग्रस्त होने पर पुनर्जीवित नहीं होती है। प्रसिद्ध न्यूरोबायोलॉजिस्ट प्रो. मोनिका सदानंद ने बताया कि विश्व भर के न्यूरोलॉजिस्टों ने पक्षी वैज्ञानिकों से आग्रह किया है कि जल्द से जल्द उस तत्व का पता लगाने का प्रयास किया जाए। वे इसका प्रयोग कर कोमा में जाने वाले मानव को प्राणदान देने में कर सकेंगे।

बताया कि अभी तक पक्षी वैज्ञानिकों को इस बात का पता चला है कि पक्षियों के मस्तिष्क के केंद्र से कोशिकाएं पैदा होती हैं। यही नहीं ये कोशिकाएं हर मौसम में तैयार हो कर पक्षियों को नए गीत गाने के लिए प्रेरित करती हैं।

प्रो. मोनिका सदानंद ने कहा कि इस खोज पर पूरे दुनिया के पक्षी वैज्ञानिक काम कर रहे हैं। इस शोध में वे भी लगी हुई हैं। शोध के सही परिणाम सामने आए तो यह तय है कि कोमा में जाने वाले इंसानों का प्राणदान मिल सकता है।

दैनिक जागरण :- मार्च, 12, 2015 सौजन्य से :- डॉ. एस.पी. सिंह

जलवायु परिवर्तन से जैव विविधता पर संकट

देहरादून : दून विश्वविद्यालय में आयोजित गोष्ठी में (इंडियन पैनल और क्लाइमेट चेंज) आइपीसीसी की ओर से जलवायु परिवर्तन पर रिपोर्ट पेश की गयी। इस दौरान सदी के अंत तक तापमान में आने वाले बदलाव और प्रदेश की पारिस्थितिकी पर पड़ने वाले प्रभाव पर मंथन भी हुआ। दून विश्वविद्यालय में आयोजित कार्यक्रम का आगाज विश्वविद्यालय की असिस्टेंट प्रो. राशि मिश्रा द्वारा निर्देशित लघु फिल्म 'स्विगिंग साइलेंस' के प्रदर्शन के साथ हुआ। इस लघु फिल्म में पौधों के महत्व को दर्शाते हुए उन्हें बचाने की जरूरत पर बल दिया गया। मुख्य अतिथि गढ़वाल विश्वविद्यालय के पूर्व कुलपति डॉ. ए.एन. पुरोहित ने कहा कि राज्य की पहचान जैव विविधता से है। जिसे लगातार बढ़ते तापमान से नुकसान हो सकता है। इसके अलावा पूर्व मुख्य सचिव आर. एस. टोलिया, वाडिया इंस्टीट्यूट के निदेशक प्रो. अनिल कुमार गुप्ता, डॉ. अखिलेश सुरजन, डॉ. कुसुम अरुणाचलम ने भी रिपोर्ट पर विचार व्यक्त किए।

दैनिक जागरण :- मार्च, 12, 2015 सौजन्य से :- डॉ. एस.पी. सिंह

मधुमक्खियां दिलाएंगी हाथी के आतंक से निजात

डी.एफ.ओ. धकाते ने जो शोध किया है, वो सफल रहा है। इसको देखते हुए दून वन प्रभाग के तहत हाथी प्रभावित इलाकों में इसका परीक्षण होगा। इससे मधुमक्खी पालन को तो बढ़ावा मिलेगा ही, साथ ही हाथियों के आतंक से भी छुटकारा मिल सकेगा। (श्री दिनेश अग्रवाल, वन मंत्री)

देहरादून : हाथियों के आतंक से लोगों को निजात दिलाने के लिए मुख्यमंत्री श्री हरीश रावत के निर्देश पर दून वन प्रभाग अब मधुमक्खी पालन को बढ़ावा देने जा रहा है। हल्द्वानी के आई.एफ.एस. अधिकारी के शोध को आधार मानकर वन विभाग मधुमक्खी पालन की तैयारी में है।

देहरादून वन प्रभाग के कई इलाकों में लोग हाथियों से खासे परेशान हैं। हाथी फसलों को तो बर्बाद करते ही हैं साथ ही मकान-दुकान को नुकसान पहुंचाने के साथ लोगों की जान भी कई बार सांसत में पड़ जाती है। इसको लेकर वन विभाग के पास लोगों की शिकायतें आती रहती हैं। इसके चलते दून वन प्रभाग अब हाथियों से निजात के लिए हल्द्वानी केन्द्रीय वन प्रभाग के डी.एफ.ओ. पराग मधुकर धकाते के शोध को आधार मानते हुए जल्द ही मधुमक्खी पालन करने जा रहा है। धकाते के शोध के मुताबिक, जिन स्थानों पर मधुमक्खियां रहती हैं, वहां हाथी आवागमन नहीं करते हैं। हाथियों को मधुमक्खियों से दिक्कत होती है। इसलिए दून वन प्रभाग मधुमक्खियों को ऐसे स्थानों पर पालेगा, जहां हाथियों का आतंक है। वहां, डीएफओ पीके पात्रा ने बताया कि दून वन प्रभाग के डोईवाला, नकरौंदा, बालावाला, रायवाला में हाथियों का आतंक ज्यादा है। मुख्यमंत्री कार्यालयसे जारी निर्देश के बाद फिलहाल दून से शुरुआत की जा रही है। यह प्रयोग दिवाली के बाद किया जाना है। हाथी प्रभावित इलाकों में मधुमक्खी पालन के बक्से लगाए जाने हैं।

अमर उजाला :- नवम्बर, 11, 2015 सौजन्य से :- डॉ. एस.पी. सिंह

गुलदार के पेट से निकले गुटखे के रैपर

देहरादून : सूबे में आफत का पर्याय बने गुलदार भूख मिटाने को अब गुटखे के रैपर भी खा रहे हैं। बात अटपटी जरूर है, लेकिन गढ़ी कैंट क्षेत्र में फंदे में फंसकर मृत गुलदार के पोस्टमार्टम के दौरान उसकी आहार नली से गुटखे के दो रैपर मिलने से चिकित्सक और विभागीय अधिकारी भी चौंक गए। चर्चा का दौर भी चला। हालांकि, विशेषज्ञों का मानना है कि संभवतः गुलदार ने ऐसे जानवर को खाया होगा, जिसने गुटखे के रैपर भी घास के साथ खा लिए थे। इसके चलते ये गुलदार की आहार नली में फंस गए।

असल में गढ़ी कैंट क्षेत्र में 59 गोरखा राइफल्स की आवासीय कॉलोनी के पास फंदे में फंसा एक गुलदार वहां सीवर लाइन के पुराने टैंक में झूल गया। पांच घंटे बाद उसे बेहोश कर निकाला गया, लेकिन उसने दम तोड़ दिया। इस मादा गुलदार का रविवार को मालसी डीयर पार्क में तीन पशु चिकित्सकों के पैनल ने पोस्टमार्टम किया। इस दरमियान डॉक्टरों के साथ ही विभागीय अधिकारी तब हैरत में पड़ गए, जब गुलदार की आहार नली से गुटखे के दो रैपर मिले। देहरादून वन प्रभाग के उप प्रभागीय वनाधिकारी गुलवीर सिंह ने इसकी पुष्टि की।

उधर, भारतीय वन्यजीव संस्थान के वरिष्ठ वैज्ञानिक के. रमेश ने इस घटना को सामान्य करार दिया। उन्होंने संभावना जताई कि इस गुलदार ने ऐसे जानवर को खाया होगा, जिसने घास के साथ गुटखे के रैपर भी खा लिए हों। ऐसे में ये गुलदार की आहार नली में फंस गए होंगे। उन्होंने इस घटना के आलोक में गुलदारों की फूड हैबिट में फिलहाल किसी तरह की बदलाव की संभावना से इन्कार किया।

दैनिक जागरण :- सितम्बर, 15, 2015 सौजन्य से :- डॉ. एस.पी. सिंह

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The Wildlife Preservation Society of India

The aims and objects of the Society are as follows :-

1.
 - (a) To promote interest and impart knowledge regarding the preservation and conservation of all forms of wildlife, particularly among the youth of the country.
 - (b) To cooperate with the Govt. of India and State Governments and with others Societies and Institutions having similar aims and objects in working for the interests of wildlife.
 - (c) To assist in enforcing and actively supporting the Forests Acts. Wild Birds and animals Protections Acts and Rules etc. of State Governments and the Indian Arms Act and Rules in so far as they pertain to wildlife and to bring to the notice of the authorities any infringement of the same and to assist in the detention and prosecution of offenders in respect of such laws.
 - (d) To advise and help the Govt. and wildlife administrators in the formation, maintenance and protection of Sanctuaries and National Parks, preservation of wildlife in general and endangered species of India in particular and in the introduction of exotic species into the country, rehabilitation of endangered species etc. and in the formulation and amendments of rules and acts, so as to conserve and increase wildlife stocks.
 - (e) To raise funds for carrying out the above aims and objects and to found and maintain museums reading rooms and libraries of natural history in order to disseminate knowledge regarding wildlife.
 - (f) To carry out publicity and propaganda for the preservation of wildlife in India by means of monographs, journals, films, filmstrips and other feasible methods.
 - (g) To assist members of the Society in obtaining facilities for viewing and photographing wildlife in India.
 - (h) To conduct research into the problem of Wildlife management in India, and in pursuance of this, to initiate, encourage and, where possible assist in the projects of the study of threatened species and related objects and to provide reference and research facilities for such work.
 - (i) To carry on such other activities which will serve the above subjects.

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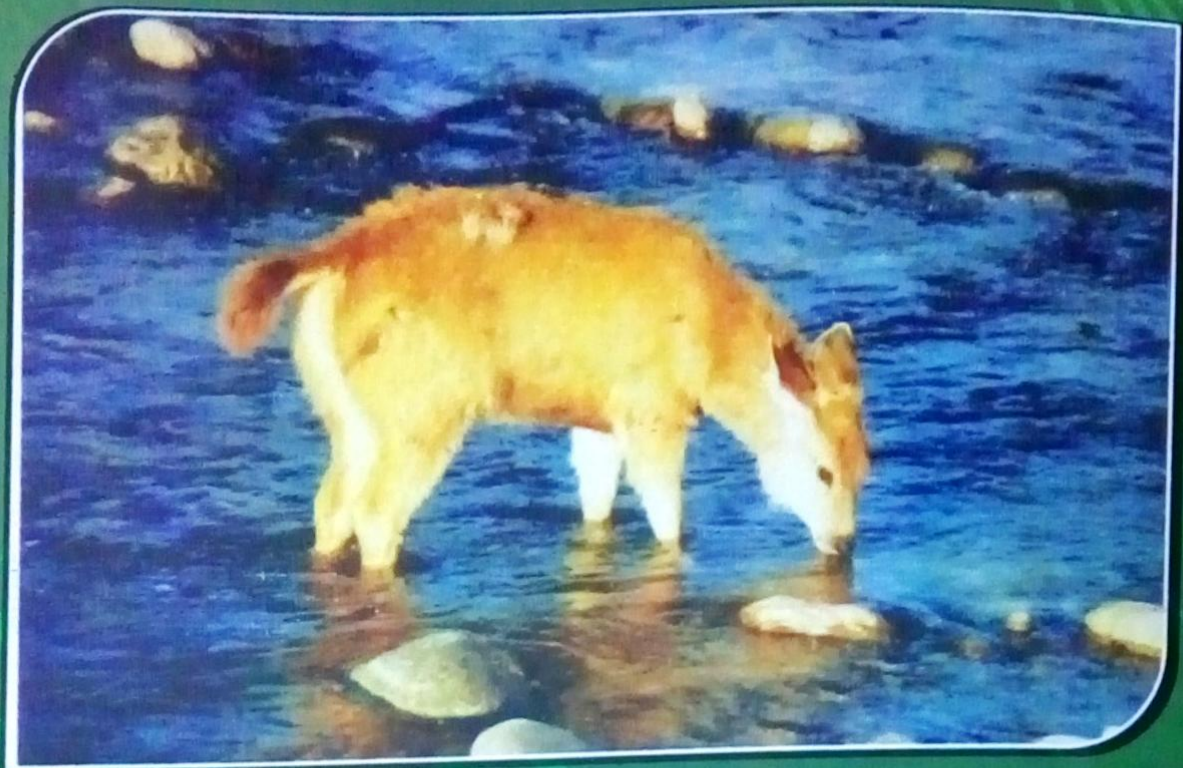


Marsh Crocodile

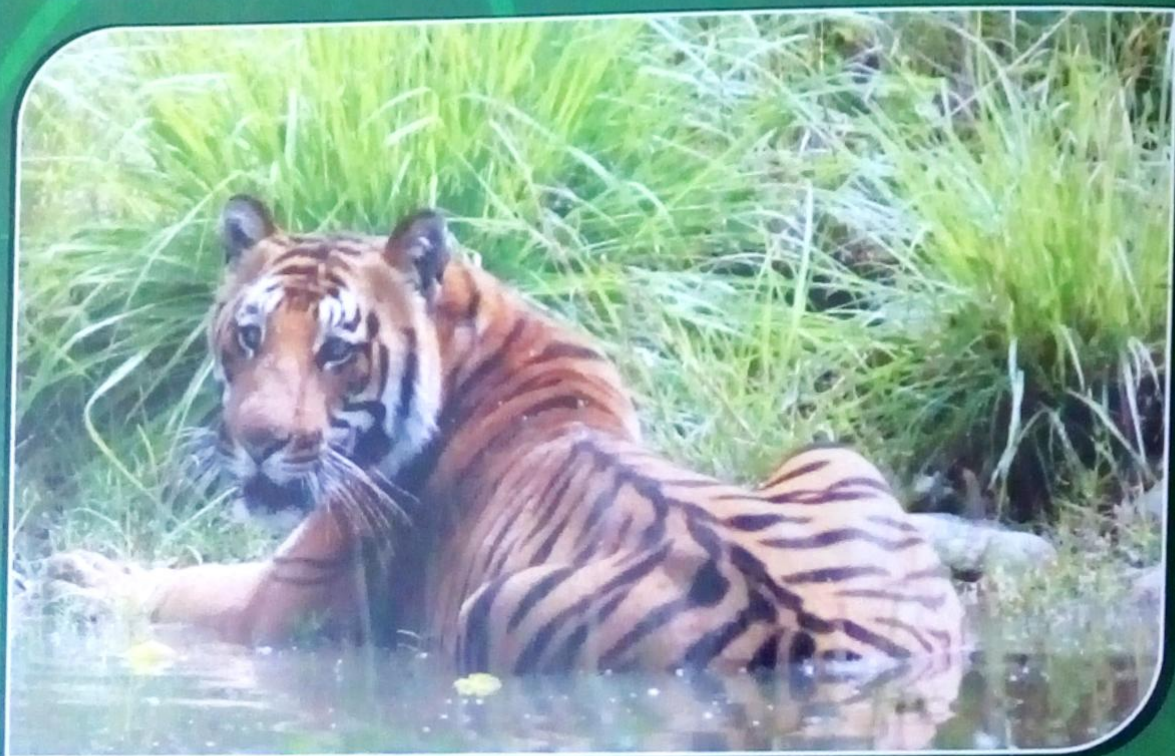


Indian Python

Photo By : A.S. Negi



Sambar Fawn drinking from Ramganga in Corbett National Park



Tiger at Corbett National Park